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THE FUNCTIONAL VERSUS THE REPRESENTATIONAL THEORIES OF KNOWLEDGE IN LOCKE'S ESSAY

BY

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THE FUNCTIONAL VERSUS THE REPRESENTATIONAL THEORIES OF KNOWLEDGE IN LOCKE'S ESSAY

A DISSERTATION

SUBMITTED TO THE FACULTIES OF THE GRADUATE SCHOOLS OF ARTS, LITERATURE, AND SCIENCE, IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

(Department of Philosophy)

BY

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NOTE.

THESE comments on Locke's *Essay* are the outcome of work done in Professor Dewey's seminar in advanced logic. The general standpoint of the entire treatment was developed in that course. For interpretations and criticisms of the *Essay*, and for certain elaborations of the general point of view in the course of these criticisms, the writer is to be held responsible.

The treatment does not pretend to cover all the points of doctrine in the *Essay*. It aims to consider only some of the well-known passages, from the standpoint of a conception of the nature and function of knowledge somewhat different from those from which previous criticisms have been made.

In the references to the *Essay* the first arabic figure following the number of the book refers to the chapter, the second to the section.

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I.

INTRODUCTION.

THE history of thought shows that every period of great scientific advance, bringing a larger freedom to the practical side of life, has developed at the same time a deep and widespread skepticism in theories of knowledge. As Greek science had its Protagoras and Pyrrho, so modern science has its Hume and Comte. Thus an increasing sense of power in "the conduct of life" and a deepening sense of impotence in the attainment of knowledge have developed side by side. What is the meaning of this paradox?

It is frequently said that this state of affairs is due to the fact that in turning philosopher the "practical man" and the scientist attempt to carry over their standards into the realm of ultimate truth and reality, where they are inadequate, because applied beyond the limited sphere in which and for which they are created.[1] From this statement it appears that the paradox is due to a difference between the epistemologist's standard of ultimate truth and reality and the everyday working standard; and it is assumed that it is the latter that is inadequate. But the statement suggests also that, formally at any rate, the paradox could as well be stated from the opposite side; that is, as due to the fact that the epistemologist is unable to carry his standard of ultimate truth and reality into the realm of everyday life. In still other words, the paradox may be due, not to the carrying over, but to the failure to carry over, the standard of everyday life into our epistemology. Of course, our epistemology professes to make explicit the standard involved in everyday experience. But the very fact that this explication issues in this paradox suggests that somewhere in the process this standard becomes so changed as to be no longer available for its original purpose.

Very briefly and generally sketched, the transition from the one standpoint to the other is somewhat as follows: The scientist in his laboratory or the workman at his bench is after a certain concrete result. A part of the entire process of reaching this result is thinking—making judgments. And he finds that these new judgments involve apparent rejection of former ones. But from the practical standpoint

[1] *Cf.* CAIRD, *Critical Philosophy of Kant*, Vol. I, pp. 26 ff.

this matters not so long as the desired result is reached. At this point, however, the epistemologist appears with the suggestion that all this may be very well as a matter of "practical getting along," but where, in such a procedure, he asks, is there any place for truth — for certain and necessary knowledge? "Here you are making judgments one day only to reject them the next. What possible ground is there to expect that you will ever reach a judgment that will stand? What kind of confidence is to be placed in a knowledge process that is constantly rejecting its own products?" Up to this point, the practical man has not considered the problem of knowledge as such. He has been too busy getting results. In getting these results, to be sure, he has made judgments without number, but always as a *means of reaching the result.* So far, the only certainty he has cared for has been the certainty of attaining the result. But now, as an epistemologist, he is asked to abstract the judgment from its function as a part of the process of getting these results, and to pronounce upon its absolute certainty and necessity in itself considered. At the first encounter with the problem, Hume's final verdict, that the judgment has plenty of "practical," but no "absolute" validity, is likely to be the conclusion. But further reflection may make it possible to say: "It is true these judgments are all partial and imperfect; they wait upon a final absolute judgment for their completion; but, as *contributing factors* in this absolute judgment, they share in its absolute truth."

But in thus getting clear of Hume's skepticism on one side, the danger of running upon Spinoza's Identity Absolute, in which the distinction between truth and error vanishes, appears on the other. If all these judgments "share" in the absolute *truth*, in what does error consist? If it be said that error lies in the *partial* character of the judgment, and that every judgment is, therefore, partly true and partly false, we still must decide *in what* — that is, in what aspect or direction it is true and in what false. And it would seem that we must first have the whole before even this "partial" truth and falsity can be determined. If (as a matter of *practical necessity*, and using a *practical* standard) we *do* make a discrimination between truth and error, what sort of guarantee is there that, when the judgment takes its place in the whole "system of truth and reality," what has been determined as "true" will maintain its character as such?

Again, if this conception of "degrees of truth and reality"[1] be taken purely *quantitatively*, it would seem that the judgment expressing

[1] *Cf.* BRADLEY, *Appearance and Reality*, chaps. xvi and xxiv.

the higher degree of truth and reality must include those expressing the lower ; and, if it is a question of the amount only of truth and reality, the retention of judgments containing the lower degrees would seem to be useless. On the other hand, qualitative differences seem equally difficult to reconcile with the quantitatively complete reality. For here each quality must be a quality of the whole reality. Differences in quality must mean taking the whole reality from different standpoints, from different angles ; else we shall have as many different realities as there are qualities. But if the whole must appear in each quality, what can be meant by a judgment expressing a part of, or more or less of, reality ? How, for example, shall the quantitative scale be applied to such a pair of judgments as, " The apple is red," " The apple is sweet "? or, " The apple is red," and " Honesty is the best policy" ? Here it may be said that it is precisely the category of quality that makes it possible for the whole to appear in the part — that in abstract quantity the whole cannot appear in the part, but the part can have the *quality* of the whole, and the quality of the whole can be expressed in the part. But, even so, if the whole does thus express itself in the quality, why should there be any complaint of incompleteness ?

In terms of the relativity of knowledge the problem is : To what is knowledge relative ? If we answer that it is relative to more knowledge, to an assumed whole of knowledge, then again we must ask : Whence comes error, and how can we decide on the character of any particular judgment unless we have this whole ? If, on the other hand, we say that the whole of knowledge — *i. e.*, knowledge as such — is relative, then the question, " To *what* is it relative ?" seems pertinent.

Returning once more to the point where the " plain man" and scientist begin epistemologizing, may not the root of the difficulty lie in the fact that in " turning epistemologist" they " turn " too much, and so get the shop and laboratory completely behind their backs ? Do not many of the " metaphysical puzzles," a few of which are suggested above, grow out of the abstraction of the judgment from its function in the laboratory of the scientist and in the larger laboratory of life ? In the latter it does yield an ever-increasing sense of power, security, and certainty ; as abstracted it appears untrustworthy. Returning to the shop and laboratory with the result of our examination of the judgment as a thing or product apart from its function, we say: " The certainty here is, after all, merely practical. Judgments, to be sure, are quite useful, indeed necessary. But this is quite a different matter

from their validity as expressions of ultimate truth and reality." Let it be noted, again, that it is as a partial expression of an assumed whole of truth and reality that the judgment is found wanting. Its value, its validity as a function in the concrete conduct of life, is not questioned.

To sum up thus far: The paradox of increasing practical control and decreasing theoretical certainty suggests that there must be a difference between the standard of knowledge used in the "conduct of life," and the standard used in philosophy. Taking the judgment as the unit of knowledge, we have seen that in the shop and laboratory it is used as a means of getting results valuable in terms of the whole concrete life-process. In philosophy, the realm of decreasing certainty, the judgment is abstracted from this concrete activity. Thus deprived of its native source of value and validity, a basis of valuation is sought for it in some system of absolute reality of which our judgments constitute a progressive revelation. But such a basis appears to offer no criterion for a distinction between truth and error in any particular judgment, and no ground for even a "relative" certainty. The significance of this would seem to be that philosophy is to learn that it is not entitled to a special view of its own of knowledge; that it must take knowledge as it finds it; that it must interpret it on its native heath — the field of the struggles, of the victories and defeats, of concrete living.

II.

HISTORICAL.

HISTORICALLY the roots of this paradox of the increasing practical and decreasing theoretical value of knowledge run back finally to the beginnings of Greek reflection.[1] The period of the further development of it to which Locke belongs dates from the movement which began when the fierce, but undefined and undirected, energy of barbarian life came in contact with the ordered and categorized life of the Græco-Roman civilization. Better conditions for developing a thoroughgoing dualism of thought and action can scarcely be conceived. On the one hand is the great tide of barbarian energy crying for direction, for some means of defining and controlling itself. Instead of gradually evolving through toilsome centuries its own formulæ out of its own life, it suddenly stumbles, in its thrashings about, upon a complete system ready-made to its hand. How could such a system appear to the barbarian other than external, given, and, as compared with his own meager formulations, complete and absolute? What could he do but acknowledge its authority and begin slowly the process of "learning"?

On the other hand, the system itself found that, instead of carrying forward the complex life out of which it had naturally evolved, it had to turn primer schoolmaster. Little wonder that scholasticism grew dogmatic and seemed to itself as well as to the barbarian complete and absolute. Thus the same situation that made the system appear external and absolute to the barbarian made it appear equally so to the Græco-Roman. On the one side was the feeling of need; on the other, the feeling of perfect ability to supply. Both felt that the mastery of the system was all that the barbarian could ever hope to accomplish in this world or the next.

But "what God hath joined" is hard to put asunder. No sooner was this dualism of thought and action set up than the movement toward its removal began. Slowly, awkwardly, and spasmodically the Teutonic hosts set about working out their salvation under the authoritative direction of the Græco-Roman formulæ. But in working out their own salvation they wrought at the same time the destruction of the system. At first, of course, no discrepancy in the system appeared.

[1] *Cf.* DEWEY, *The Significance of the Problem of Knowledge.*

So great was the advantage gained in the additional control of action that there was no feeling of the limits of the conceptions which gave it. But in the course of time the gradual development of scientific activity and the accumulation through generations of scientific results began to press upon the limits of the formulæ that had made them possible. This, as always happens, led for a time to a more vigorous emphasis of the formulæ. With a filial devotion the system which had been of such service in turning barbarism into civilization was bolstered and defended against the "insidious attacks of science." Wherever possible, the recalcitrant results were either ignored or the limits of the system stretched at some point to make room for them. Of course, when such sweeping work as Galileo's had to be dealt with, there was trouble. And, be it noted again, in this very difficulty with such work as Galileo's the bond between the theoretical and the practical was revealed. Galileo was not sent to prison for merely "thinking thoughts"—for entertaining certain mere hypotheses. It was because his thoughts were threatening the whole social structure. Science, art, politics, industrial institutions were all bound up with, indeed were parts of, the dogmas of the Church. Little wonder that, when the latter were flatly contradicted, people instinctively felt that the foundations, not of a belief merely, but of life itself, were threatened.

On the other hand, it was just this opposition that brought the sense of movement into definite consciousness. The rigidity of the scholastic system furnished the fixed object in the field of vision without which the sense of movement—of the march of life—could not have arisen so vividly. But almost in the same breath in which this open opposition between theory and practice was affirmed came the declaration that it ought not to be, and the demand for reunification. The open breach was thus really the culmination of the first stage in the movement, which all the while had been working below the surface, toward the removal of the original dualism of theory and practice set up by the contact of the barbarian and Græco-Roman. The difficulties involved in the assumption of the dualism had to come out before the movement toward unification could begin in earnest. Moreover, as we shall see, the very effort to effect this unification involved the further development of the opposition to its culmination in Hume.

From this point of first revolt against scholasticism down to Hume this development in England may be divided into three sub-periods :

1. The first period denounces the separation of theory and practice, and affirms the practical functionof knowledge, retaining, however, the

scholastic conception of knowledge as some kind of a transcript of a system of already constructed reality. In this period there is no doubt as to the possibility of complete and certain knowledge. The contention is that the scholastic system does not furnish it. To this period belong Bacon and Hobbes.

2. The second period is marked by the rise of the tension between the conception of the function of knowledge in relation to practice, on the one hand, and the scholastic conception of it as reporting a completed system of reality, on the other. The nature of this tension was, of course, not recognized. It was the hidden source of the problems and difficulties of the period. To this stage belong Locke and Berkeley, with Descartes and Spinoza on the continent.

3. It remained for Hume in the third stage to pursue to the last ditch the consequences of the assumption that knowledge must *first* get its validity established from some external source before it can be applied to action. Since Locke falls in the second period of this movement, in order to give him his proper setting, the first period should have a little fuller statement than the merely formal one given above.

Both Bacon and Hobbes start with an arraignment of scholasticism on the charge of divorcing knowledge and action, and with very explicit statements of the practical function of knowledge. Beside the well-known aphorism, "Knowledge is power," which Hobbes quotes, Bacon says:

> In behalf of the business which is in hand, I entreat men to believe that *it is not an opinion to be held but a work to be done, and to be well assured that I am laboring to lay the foundation, not of any sect or doctrine, but of human utility and power.*[1]
>
> The true and lawful goal of the sciences is none other than this: that human life be endowed with discoveries and powers.[2]
>
> Of all signs there is none more certain and noble than that from fruits; for fruits and works are, as it were, the sponsors and sureties for the truth of philosophies.[3]

While Bacon and Hobbes are both so explicit in their declarations that there is *a* connection between knowledge and action, and in their demand that the scholastic *idola* be put away and this connection be made, they do not, as Windelband says of Bacon, "get much beyond this *demand*."[4] They cannot discover what the connection is. The

[1] *Novum Organum*, preface. [2] *Ibid.*, Book I, sec. 81. [3] *Ibid.*, Book I, sec. 73.

[4] *History of Philosophy* (Tuft's translation), p. 384.

chief obstacle in the way of this discovery is that the scholastic conception of the *character* of knowledge is still retained. Knowledge is still conceived as reporting a completed system of reality and as influencing action from without. Bacon's objection to the scholastic system is brought, at bottom, not against its essential character in itself considered, but against its *results*. He agrees with the scholastic notion that the great body of truth "is *there*." The problem is simply to get the *idola* out of the way so that we may see the truth. It is true, Bacon and Hobbes have much to say about "the deception of the senses" and the need of experiment. But this deception of the senses is due merely to the misuse, or rather lack of use, made of them up to that time. And the demand for experiment is simply a demand for devices for clearing away the débris between the senses and the material, so that the former may get at the "simple natures" of the latter. What is spoken of as "transcendent of sense" is simply something which sense has not transcended, but may, with more careful exercise and the help of experiment in clearing away the obstacles. But of experiment in the modern sense, in which the working hypothesis, *i. e.*, the judgment, becomes part and parcel of the process of experimentation itself, Bacon and Hobbes had no conception. Says Bacon: "For certain it is that the senses deceive. But then at the same time they supply the means of discovering their own errors."[1]

With such conceptions there could be no question for Bacon and Hobbes as to the ultimate possibility of certain knowledge, at least so far as concern, affairs of this life. Practical difficulties there were, great and numerous, but there were no theoretical obstacles. Bacon and Hobbes then stand for the formal declaration of, and demand for, the unity of thought and action. But still retaining the scholastic conception of the nature of knowledge, this unity is conceived as external, not organic. Not attempting to work out the nature of this unity in detail, they develop no skepticism concerning the possibility of certain knowledge.

In the second stage of this movement, the period of Locke and Berkeley, we find quite a different state of affairs. Here the paradox of increasing practical efficiency and decreasing theoretical certainty makes its appearance. Here the problem of knowledge begins to emerge, and the epistemologist appears. The assumption is still that knowledge must first find credentials of certainty before it can be a guide to action. But, instead of the naïve assurance of ability to reach

[1] Introduction to *Novum Organum*.

this certainty which we find in Bacon and Hobbes, there is doubt and skepticism. What with them was unquestioningly assumed is with Locke and Berkeley the main issue. The outcome we well know. After wrestling with the problem, both were compelled to seek the credentials of knowledge in a source beyond experience — Locke in matter, and Berkeley in the Deity.

III.

LOCKE'S PROBLEM.

As already stated, Locke's problem springs out of the tension between the conception of knowledge as a part of conduct and the scholastic conception of it as reporting a system of external reality. This antithesis is expressed in the paradox of practical certainty and theoretical skepticism. Two lines of influence conspired to raise this tension and sharpen the paradox in Locke; on the practical side, the rapid advance in scientific and political development; on the theoretical side, the work of Descartes.

Galileo, Newton, Boyle, and Huyghens were Locke's contemporaries, and two of them were his countrymen. In the political world the people were fighting and winning their last battle with the tradition of the divine right of kings and popes. Locke wrote the closing paragraphs of his *Essay* as cannon were booming the people's welcome of William and Mary. A sense of growing power, control, freedom was in the very atmosphere. People were beginning to feel that reality did not lie off in some other world, nor in the decrees of king or priest. They were beginning to find it in the movement, the unfolding of their own experience. All this indicated that the old scholastic system of judgments as constituting a fixed body of truth, scientific, political, and religious, was breaking up and that doubt of the possibility, on the old basis, of reaching judgments that would stand was emerging.

Meanwhile this same doubt had already been faced by Descartes from whom, rather than from his predecessors, Bacon and Hobbes, Locke took his cue. For, as we have seen, Locke's English predecessors had no such doubt, hence no such problem. Locke's work, however, is not a development of Descartes's. It simply takes up the same problem and with the same assumption, viz., that the problem of certainty is a problem inside knowledge as such, and must be worked out there. Under these two motives, then, Locke begins his work. As an Englishman and a man of affairs he has the conviction that thought is a part of "the conduct of life;" following the example of Descartes, he takes up the task of investigating certainty, truth, and error as direct attributes of thought considered apart from its function in the conduct of life.

On the function of knowledge Locke has left plenty of statements. A few will suffice to show his attitude:

The last resort a man has recourse to in conduct of himself is his understanding. For though we give supreme command to the will as to an agent, yet the truth is the man determines himself to this or that voluntary action upon some precedent knowledge or appearance of knowledge.[1]

We shall not have much reason to complain of the narrowness of our minds, if we will but employ them about what may be of use to us . . . . The candle that is set up in us shines bright enough for all our purposes.[2]

Our business here is not to know all things, but those which concern our conduct. If we can find out those measures whereby a rational creature may and ought to govern his opinions and actions depending thereon, we need not be troubled that some other things escape our knowledge.[3]

This certainty is as great as our happiness or misery beyond which we have no concernment to know or to be.[4]

With knowledge thus "set on the top of action," the determination of its certainty and validity becomes, as Locke says, all the more necessary. But the very fact that it is so literally "set on the *top* of action" instead of *in* it makes the determination of this certainty a difficult problem. Locke's ambition is to find the same degree of certainty in the theoretical realm as is developing under the advance of science in the practical world. His difficulty is to do this without making it the same in kind as well as in degree. Here it may seem as if we must be misrepresenting Locke when we make him say in one breath that knowledge is for the sake of action and in the next that there is a certainty in the practical realm lacking in the theoretical. But this, as we have seen, was precisely what constituted the paradoxical character of the whole conception of knowledge in his day.

1 *Conduct of the Understanding*, Introduction, sec. 1.
2 Book I, 1:6. 3 Book I, 1:7. 4 Book IV, 2:14.

IV.

ORIGIN OF IDEAS.

VERY much of the positive part of what Locke offers in this first account of the origin of ideas is virtually a statement of content. Thus, simple ideas of sensation are "uniform appearances of touch, sight, taste, smell, etc., conveyed into the mind from external objects by the senses." The other group — ideas of reflection — are "ideas of the mind's operations: perception, thinking, doubting, believing, reasoning, knowing, willing, and all the different actings of our minds." Taking from these statements the descriptions of content, we have left for the account of origin the simple statement that one group comes from sensation, the other from reflection. This virtually makes the source simply a quality of the idea turned into a faculty or a process. That is, the distinction of sensation and reflection already existing as one of content, the question of origin is disposed of by referring these two kinds of ideas to two corresponding faculties. Both sets of ideas are thus given outright, one by the process of sensation, the other by the process of reflection. Locke's satisfaction, at this point, with this short and easy disposition of the question of origin is due to the fact that he is here interested primarily in analyzing and describing ideas as the mere materials for knowledge. In Book IV Locke tells us that it is only as combined in the judgment that ideas constitute knowledge. Meanwhile they can be abstracted from the judgment for purposes of analysis and description. As thus abstracted, the idea becomes merely a psychical "thing" — an existence capable of analysis and description, as is a plant or an insect.

From this standpoint the question of origin becomes merely a part of the analysis and description of this material of knowledge. It is not yet so vital as it becomes in Book IV, where this material is to be transformed into knowledge. There the question of origin becomes a part of the problem of validity, and Locke is forced to a much fuller discussion of sensation and reflection as processes than he here gives. There Locke finds that the same processes of sensation and reflection which here somehow produce these two kinds of ideas are also the processes that turn them into knowledge. Hence he has at once the problem of distinguishing between the work of these processes as

furnishing material merely, and as converting this material into knowledge. He finds that in knowledge the processes apparently repeat the operations involved in producing the material, and, conversely, in producing the material they also produce knowledge. Thus knowledge is given along with the material. On the other hand, when, feeling this difficulty, Locke insists that these ideas given through sensation and reflection must be regarded as the mere disconnected materials for judgment, he yet cannot point out where the processes of sensation and reflection do anything different in turning this material into knowledge from what they have done in producing it. In the process of knowledge, sensation and reflection thus repeat the operations involved in furnishing the material, and in furnishing the material they perform all the operations involved in knowledge.

From the standpoint of validity the same difficulty appears. Thus the problem of the validity of the constructive process in knowledge becomes a matter of the validity of materials used. And the latter is sought, not in a further examination of the processes of sensation and reflection, but in an appeal to the "thing." But the appeal to the "thing," as Green continually points out, is an appeal back to the constructive process.

In one phase of Book IV, as will appear more in detail farther on, Locke attempts to break this circle by making a division of labor between sensation and reflection. Instead of two parallel processes producing the material, he has sensation furnish the material and reflection turn it into knowledge. This is, of course, a foreshadowing of Kant's solution, and it foreshadows, too, in a general way, Kant's difficulty. The difficulty, indeed, is essentially the same as that stated above. The material is found either already connected in sensation, or so disconnected that reflection seems unable to make a connection; or, again, if a connection be made, then the material is so changed and reconstructed that its value as a connecting point with reality is lost.

All this points to the fact that the origin cannot be treated apart from the function of the idea; that the process in which it gets existence is also the process in which it has its meaning and value. This finds a general and indirect recognition from Locke in his stand against innate ideas. In this Locke is really protesting against ideas as mere material. He is insisting that the idea does not get an existence except in and through its functions, viz., indicating an object. Doubtless Locke's ideas, given directly by the thing, are epistemologically as innate as those implanted by the Deity. But the point in favor of Locke's ideas

is that they are implanted in the process of *constituting or representing an object*. They are not mere inactive content on the one hand, nor empty capacity on the other.

In this chapter on "Origin" Locke comes closer to the problem on the negative than on the positive side. The latter, as we have seen, consists of little more than a mere description of the ideas as given. Having disposed of origin in this perfunctory way, Locke turns to what, from his standpoint, is the most important distinction of ideas — that of simple and complex.

V.

SIMPLE AND COMPLEX IDEAS.

This is the most fundamental of the classifications of ideas which Locke makes when he is attempting to deal with the idea apart from the judgment. Here Locke brings out the function of the idea in both the analytic and synthetic phases of experience. He throws into relief, too, from the standpoint of both these phases, the difficulties in the attempt to interpret the material apart from the process of knowledge. The treatment of this classification shows also how Locke's view of his problem reflects the whole spirit of the movement of the time. Science was trying to get at the ultimate "forms," the fixed elements of the physical world. In politics the revolution issued out of the question as to where lay the final constituents of political power — in the sovereign or in the people. In the world of religion, the reformation involved the question of whether the essential unit was the Church or the individual. Each of these worlds was conceived as a perfectly completed existing order. The problem was to find out what they eternally *are*. "There *is*, existing from all eternity, a true physical order, a true political order, a true religious order." It is there; the problem is to find out by a careful analytic scrutiny the ultimate elements of its constitution. This is to be done by a process of direct observational analysis. Experimentation is to be employed; but, as we have seen, the function of experiment is merely that of bringing the material within range and breaking it up so that the mind can get at it. The act of discrimination itself is simply a matter of straight looking.

While theoretically all this analytic activity was exerted to find out what *is*, practically it was always for the sake of a re-synthesis of the elements found, as a means of reaching certain desired results. Moreover, as we shall see, the real criterion for the true element was always found in these results. From this standpoint of direct observational analysis Locke is viewing his problem. The world of knowledge is there — a perfectly determined system. We have but to look closely enough to find its elements, just as the scientist looks for the elements of a plant or an animal. And this suggests that there is perhaps no better way of bringing out the weakness in this view of knowledge than by a statement of the function of the idea in the work of the scientist.

In looking for the element of the plant or the animal the scientist employs ideas as his instruments of analysis. It would seem, then, that any attempt to isolate the idea from its work in the shop and laboratory, and make it in itself the object of analysis and synthesis, involves a conception of an idea and of analysis and synthesis quite different from that actually employed by the scientist and artisan. If the idea is an *instrument* of, rather than *material* for, analysis and synthesis, any attempt to make it the latter would seem to be a case of "the psychologist's fallacy." We should expect also that the attempt to apply the categories of simple and complex to ideas in the same way in which they are applied in the shop and laboratory should find itself either without any adequate criterion for the distinction, or turn out to be an account of the shop and laboratory process of analysis and synthesis.

Perhaps the best order of discussion at this point is to survey briefly (1) the laboratory process of analysis and synthesis, showing the criterion for simple and complex, and the function of the idea in the laboratory process; (2) Locke's "simple and complex" compared with that of the scientist, showing the former's lack of an adequate criterion, and the confusion and final desertion of his formal criteria.

As an illustration of the scientific process, we may take the analysis of color. So long as color experience is taken as it comes, as merely given, and no effort is made to reproduce or control it, there will be no "elementary" or "complementary" colors. Green, purple, and white are all on a par. Each is a perfectly unitary experience. It is only in the effort to reproduce white that green and purple are taken as its "elements." As color, they are as unitary as white; as elements, they are the means to a desired color experience. And here we may note, too, that, considered as *elements*, green and purple have no more color value than have the vibrations of ether. As elements, they are simply the stimuli to certain actions, *e. g.*, the turning of a color wheel, which will bring about the experience of white light.

The same is true of the analysis of sound. So long as musical sounds are taken as *given*, there is no basis for analysis. As given, the chord and note are co-ordinate. It is only when some effort is made to control and produce various sound experiences that it is discovered that the activities required to produce some — the notes — are involved as elements in the production of others — the chords. And here, too, the note as a *mere element* has no more sound value than the air waves. It is simply a part of the machinery of producing the desired chord.

The analysis of the shop and laboratory then arises in the process of attempting to reproduce, or in some measure control, experience hitherto taken as *given*. So long as any experience remains merely given, it continues to be a unitary experience. It is neither an element nor a complex. The categories of whole and part, elements and compound, emerge only when it is discovered that in attempting to bring about a desired experience we are forced to employ, as means, activities that hitherto have themselves yielded a total experience.

The scientist's element or simple is, then, simply the stimulus to an act in a series or co-ordination of acts to bring about a desired end. *Any* content serving as such a stimulus is elemental. When, therefore, the scientist analyzes an object or content into its elements, what he does is to discover the stimuli to acts that will result in its production. As such stimuli, these elements are not themselves taken as qualitative content, but simply as stimuli to such action as will bring about the desired qualitative experience. Strictly speaking, then, the analysis is not of an object or content as such, but of the *activity* necessary to realize an ideal content. And in the shop and laboratory the sole test of the elements is whether they stimulate the acts which will bring about this realization. The object as an attained experience is always unitary; that is, unitary in the sense of a *totality*. It is only when it is regarded as something *to be attained* that it is viewed as "having" or as "made up of" simple elements. And these elements, as elements, as we have seen, are valuable, not as content, but as definers of the action, as indicators of what is to be done next to reach the result. Of course, when an experience ceases to be taken as given and becomes an end, and when the steps to its attainment, involving activities that have hitherto yielded complete experiences, have been worked out, we are not to understand that this process has not changed the character of the experience from what it was as previously given. The botanist's primrose is quite a different affair from Peter Bell's. And it is this increased value which the experience acquires, as we discover the process of its production, that is meant when we talk of its being "made up of" elements. After the problem of control has been worked out, we state this increase of value by saying that the object "possesses" all the factors, all the elements, of the activity involved in getting this control. But as they originally emerge the elements are not *in* the object, but are means *to* it. The laboratory element or simple is, therefore, one of function, not of an irreducible and unchangeable content.

On the other hand, the laboratory "complex" is just this content, which is to be worked out into the concrete. That is, the complex is the idealized content projected as an end, demanding certain acts for its realization. These acts, or rather their stimuli, are, as we have seen, the elements in the realization. Recurring to the illustration used above, it is only after white light ceases to be given and becomes a problem — that is, an end, an idea, an ideal — that it is regarded as "having" elements. *Any* content, therefore, which is to be produced or controlled through a series of acts, is complex. On the other hand, *any* content, *e. g.*, green or purple, which is serving simply as a stimulus to an act contributing to the production or control of another content, *e. g.*, white light, is functionally an element — a simple.

Now, Locke's notion is virtually to apply to ideas the laboratory process of analysis. But in such an attempt, the criterion for simple and complex must be one quite different from that used in the shop and laboratory. In the latter, as we have seen, the standard is wholly functional; simplicity or complexity is not a direct character of the content as such, but of the way it is functioning. But Locke is unable to apply any such criterion to his analysis of ideas. In the laboratory the criterion for simplicity is in the result aimed at. If the series of stimuli selected as elements bring the desired result, they are for that act the *absolutely* simple. But the only result Locke wants in his analysis is to find elements, whereas elements in science are such only with reference to a further result to which they contribute. Locke's simple and complex, therefore, must be direct atttributes of the ideas in themselves.

We are not to understand, of course, that the science of Locke's time or, for that matter, of our own is fully conscious of its own teleological criterion. Indeed, it is due to the lack of just this consciousness on the part of science that Locke thinks he is following the laboratory procedure. Indeed, Locke's system is the theory of the scientist's procedure, and so reflects the extent — or, rather, lack of extent — to which the practical world had become aware of its own method.

But while in its *theory of knowledge* the science of Locke's time regarded its elements as absolutely given, in its actual procedure its practice was saved from its theory by keeping the latter so abstract that its inconsistency with the former is concealed.[1] On the other hand, when the scientist was interested in formulating his theory of knowledge, he saved it from conflict with his practice by regarding the latter

[1] *Cf.* HEGEL'S *Logic* (Wallace's translation), p. 221.

as merely manipulating the material for knowledge. In practice the elements are always brought to the test of results. If the latter are not forthcoming, the elements are repudiated. But in constructing theory, the practice is a mere external aid in getting the elements. The fundamental problem, therefore, for Locke, in this classification, is to find a criterion for the distinction of simple and complex.

His formal criteria of the simple are: (1) that which under the gaze of the mind's eye "presents a uniform appearance;" (2) "that which the mind cannot make for itself."[1] In the first, Locke at once has to face this question: If it is a matter of simply looking, how is it to be determined whether one has looked long enough or carefully enough to bring out all the differences? Might not more prolonged and careful scrutiny bring out more distinctions? The result is that the criterion for simple virtually becomes, instead of that which *cannot* be analyzed further, that which there is *no need of* analyzing further. The same is true of the other criterion — that the simple is that "which the mind cannot make for itself." In the case of the secondary qualities, according to Locke's own statement, the mind does in a sense make them, and even in the case of the primary qualities, of size, figure, and motion, Locke admits that "the mind has to learn to discern them through a process of judgment."[2] With reference to the mind's making them, then, the simple ideas are merely those which *are not being made*, or are not being learned; *i. e.*, they are results of past experience used in constructing a new experience.

Though *formally* maintaining that the mind cannot make its simple ideas, Locke, however, points out that they are often "very difficult to attain," and that some, especially those of reflection, are never attained by many.[3] And in any case it is not "till he applies himself with attention"[3] to it that the simple idea can be obtained. The reason the savage does not see what the trained scientist does, and does not therefore get so many simple ideas, is that he does not attend so well. Thus, so far as the actual amount of work of attention is concerned, the simple ideas are just as difficult to attain, are just as little given, as the complex ideas. On the other hand, in chap. 30, where Locke is discussing the "reality" of ideas, he makes the complex idea of substance virtually as much given as the simple idea. He says: "Those [complex ideas] are fantastical which are made up of such collections of simple ideas as were never *found together* in any substance."[4] Also

[1] Book II, 1: 1, 2. [2] Book II, 9: 9. [3] Book II, 1: 8.

[4] Book II, 30:5. Brackets mine. Also in Book IV, 4:11. Locke speaks of our ideas of substances "having more or different ideas than are *found* united in the things themselves."

in the chapter on "Essence" the whole process of constructing the nominal essence is described as one of "leaving out" certain simple ideas from the highly complex ones of a number of given individual objects. But here again these "*practical* difficulties" in getting at the simple ideas are all regarded as wholly external to the process of ideation itself. They are met and overcome wholly apart from, and in order to reach, the idea. When the practical conditions are fulfilled, the idea *somehow* dawns. Even in this account it is to be noted, as showing the intimate connection between the idea and the action in which it arises, that the attainment of the idea marks the solution of the difficulty, and, conversely, the solution of the difficulty is marked by the appearance of the idea.

Turning from Locke's formal account to the way in which these two kinds of ideas actually function, we find that the simplicity and complexity which he formally makes fixed attributes of certain ideas turn out after all to be virtually the simplicity and complexity of the shop and laboratory. Locke's simple idea is always a condition of realizing a desired experience. The latter is his complex idea. In other words, the simple idea never is, properly speaking, an idea at all. It is always the direct stimulus to some action which is to realize an idea. The idea proper — that is, the idea as an ideal — is always Locke's complex idea.

All this is implied in Locke's statement, in which he serves notice that he will use simple ideas as meaning "qualities in the object which produces them in us;" and that by "qualities in objects" he means "the power in the object to produce in us the ideas;" and that by "power in the object" he means "the bulk, figure and motion of its insensible parts."[1] This "power in the object" to which the simple idea is referred is, thus, evidently a very complex affair. Indeed, Locke says point blank, as we shall see a little further on, that "these powers considered in themselves are truly complex ideas." Thus, the simple idea "yellow," as an idea, instead of corresponding to *one* quality in the object, corresponds to a number, viz, the bulk, figure, and motion of its insensible parts. This means that the moment *any* quality in the object is idealized, that is, is set up as an end, it demands its elements — the means of its production. On the other hand, when yellow is regarded as an element, it is not an idea, but a "*quality in the object*," and as such is a direct and immediate stimulus to some act; *e. g.*, if the aim be that of picking out gold from other metals, it is the stimulus to the act of reaching and grasping.

[1] Book II, 8:8.

The simplicity, then, which Locke claims for the ideas "yellow," "sweet," "round," "hard," etc., does not belong to them as ideas, but as qualities of objects, *i. e.*, as direct stimuli to action. On the other hand, all the complexity belonging to the idea "gold" is found to belong to any idea as such. The elements of the idea are in every case the conditions of its realization as a concrete experience. So, if simplicity is used in the sense of unity, the same kind of simplicity as belongs to the idea "yellow" belongs equally to the idea "gold." As ideas both are the goal, the culmination, the unity of all the activities required for their realization. As *elements* both alike are direct stimuli to action.

Locke, then, no less than the scientist and artisan, virtually makes the simplicity or complexity of a content depend upon whether it be regarded as already given and completed, and therefore capable of serving as a stimulus to further operations, or be viewed as a problem, as something yet to be obtained, and as demanding certain "elements" for its attainment.

The functional criterion is not only implied throughout Locke's account, but in many passages he comes very near an explicit statement of it. Thus he says:

> Our idea therefore of power, I think, may well have a place amongst other simple ideas and be *considered* one of them, being one of those that make a principal *ingredient* in our complex ideas of substances.[1]

Here the formal criteria laid down at the beginning of the treatment of the classification are abandoned outright. Here neither the fact that it cannot be further analyzed, nor the fact that the mind does not make it is the basis of its simplicity, but the fact simply that it is serving as an "ingredient."[2] Again, in the passage above cited, where the simple idea is explicitly declared to be both "a power" consisting of atoms in motion and "a relation to other substances," the simplicity is due entirely to its being an element. More explicit still of the functional character of simplicity is the following:

> For all those powers that we take cognizance of terminating only in the alteration of some sensible qualities in those subjects on which they operate . . . . therefore it is that I have reckoned these powers amongst the simple ideas which make the complex ones of substances, *though these powers considered in themselves are truly complex ideas*.[3]

[1] Book II, 21:3. Italics mine.

[2] This *mere ingredient* character of the simple idea is again mentioned, Book II, 29:121: "The way to prevent it [confusion] is to unite into one complex idea as precisely as possible all those *ingredients* whereby it is differenced from others."

[3] Book II, 23:7. Italics mine.

Still again :

It is sufficing to the unity of *any* idea that it be *considered* as one representation or picture though made up of ever so many particulars.[1]

Finally, Locke seems to have lost sight entirely of his formulæ where he speaks of the idea of a leopard being composed of "the simple ones of a beast with spots"![2]

Taken out of their connection, one could scarcely ask for a more frank recognition of the practical basis of the distinction. Of course, one is not to read into Locke the consciousness of any such thing. The significance of these passages lies in their showing how inevitably the functional criterion asserts itself.

[1] Book II, 24: 1. Italics mine. [2] Book II, 29: 7.

VI.

DISTINCT AND CONFUSED IDEAS.

NOWHERE in the first two books does Locke come so squarely face to face with the difficulty of characterizing the idea isolated from its relation to action through the judgment as in treating this classification. The formal statement is :

A distinct idea is that wherein the mind perceives a difference from every other ; and a confused idea is such an one as is not sufficiently distinguished from another from which it *ought* to be different.[1]

Locke sees the difficulty at once, and his statement of it, immediately following the above, could not be improved upon :

If no idea be confused, but such as is not sufficiently distinguished from another, from which it *should* be different, it will be hard, may any one say, to find anywhere a confused idea. For let any idea be as it will, it can be no other than the mind perceives it to be ; and that very perception sufficiently distinguishes it from all other ideas which cannot be other, i. e. different without being perceived to be so. No idea therefore can be undistinguishable from another from which it *ought* to be different, unless you would have it different from itself ; for from all other, it is evidently different.[2]

In what, then, does confusion consist ? Locke's answer is :

Every idea a man has being visibly what it is and distinct from all other ideas but itself, that which makes it confused is when it is such that it may as well be called by another name as that which it is expressed by; the difference which keeps the things (to be ranked under those two different names) distinct and makes some of them belong rather to the one, and some of them to the other of those names being left out ; and so the distinction which was intended to be kept up by those different names is quite lost.[3]

As illustrations of this "nominalistic" confusion Locke gives the following:

He that has an idea made up of barely the simple ones of a beast with spots has but a confused idea of a leopard.[4]

Again :

There is nothing properer to make us conceive this confusion than a sort of pictures usually shown as surprising pieces of art wherin the colors as they are laid by the pencil on the table itself mark out very odd and unusual

[1] Book II, 294. Italics mine.
[2] Book II, 29 : 4. Italics mine.
[3] Book II, 29 : 6.
[4] Book II, 29 : 7.

figures and have no discernible order in their position. This draught thus made up of parts wherein no symmetry or order appears is *in itself* no more a confused thing than a picture of a cloudy sky; wherein though there be as little order of colors or figures to be found, yet nobody thinks it a confused picture. What is it then that makes it be thought confused since the want of symmetry does not? As it is plain it does not; for another draught made barely in imitation of this could not be called confused. I answer, that which makes it be thought confused is the applying it to some name to which it does no more discernedly belong than to some other; v. g. when it is said to be the picture of a man or Cæsar, then any one with reason counts it confused; because it is not discernible in that state to belong more to the name man or Cæsar than to the name baboon or Pompey; which are supposed to stand for different ideas from those signified by man or Cæsar. But when a cylindrical mirror, placed right, hath reduced those irregular lines on the table into their due order and proportion, then the confusion ceases, and the eye presently sees that it is a man, or Cæsar, i. e. that it belongs to those names; and that it is sufficiently distinguishable from a baboon, or Pompey, i. e. from the ideas signified by those names. Just thus it is with our ideas, which are as it were the pictures of things. No one of these mental draughts, however the parts are put together, can be called confused, (for they are plainly discernible as they are) till it be ranked under some ordinary name, to which it cannot be discerned to belong, any more than it does to some other name of an allowed different signification.[1]

Reviewing the above account, we find that the first thing it does is to exclude the character of confusion from all simple ideas. For, while the formal definition given at the start applies to any idea, when he goes on to state what it is that keeps an idea from being "sufficiently different from another idea from which it *ought* to be different," Locke says it is due to "lack of a proper combination of simple ideas under a given name." There can be, then, no confusion attaching to the simple ideas themselves, since it is their improper combination that gives rise to confusion. Locke nearly recognizes this in saying, parenthetically, that "it is *complex* ideas that are *most liable* to confusion."

Limiting confusion, then, to the complex idea, Locke is still unable to make it an attribute of the idea itself, but must make it a relation of the idea to the name. The reason an idea is not different enough from another idea from which it "*ought*" to be more different is, Locke says, because the *name* of the latter can be applied to the former, or conversely. This is Locke's explanation of the "ought," the naïve use of which at the very start makes his definition thoroughly

[1] Book II, 29: 8.

functional and affords another good illustration of how the functional character of thought finds instinctive expression.

The "ought," then, as indicating that confusion aries in the failure of a response to *some demand*, could not be bettered. But we have to inquire, however, whether the failure is due simply to one's idea not being different enough from another to prevent the *name* of the latter from being applied to it.

Taking Locke's first illustration, he says the idea of a spotted beast is a confused idea of a leopard, since it is not distinguished from several other sorts of beasts that are spotted. From this account the idea must be as much a confused idea of the "several other sorts" as of a leopard. Now, it is to be noted that Locke does not say the idea of a beast with spots is *in itself* confused. He says only that it is the confused idea of a leopard or lynx or panther. That is to say, the idea "spotted beast" is not confusing, so long as that idea is adequate to guide and control action, *i. e.*, so long as the result we are after, for example the animal's skin, demands only that the beast be spotted. But if the result aimed at be more defined, if the skin must be of a certain size and the spots of certain size and arrangement, then the idea "spotted beast" is not confused, but confusing—confusing to the *action; i. e.*, the action cannot proceed under direction of *that* idea. This is what Locke means when he says the idea of a spotted beast is "a confused idea of a leopard." It is confusing to action when the action demands the definite idea of a leopard instead of the more general one "spotted beast."

On the other hand, if the action in order to move forward to the desired result demands only the idea "spotted beast" to guide it, the idea "leopard" would be equally confusing. Thus, to put it in Locke's own terms, confusion may arise in this case as well from the presence of *too many* as of "too few" simple ideas in the complex one. If what is needed is the idea of a beast with spots, any further definition in the idea would tend to switch the action from the main issue, or allow opportunities to go by. Even in this case the idea "spotted beast" is confusing, because it offers so rich a variety of action—of discharge. Locke says in this case the confusion is due to "too few simple ideas in the complex one;" because in his idea built up from given simples the intention is in inverse ratio to the extension. Locke's concept is merely the abstract phase of the concept substituted for the whole.

Strictly speaking, we are not entitled to say, as we have just said

above, in trying to state the case as nearly as possible in Locke's terms, that the idea of a spotted beast is confusing when a leopard or a lynx is what is wanted. For, if the leopard is what is really wanted, then that idea is there, and there is no confusion. The fact is that when there is confusion it is not due to some wrong idea taking possession and keeping the action clogged; it is due rather to the lack of any stable idea. The idea "spotted beast" does not persist and keep up the confusion. There is confusion because no definite idea can stay formed. The moment the ideational process itself comes to a focus, the confusion is ended. Locke comes near to stating this when he says: "A third defect that frequently gives the name 'confused' to our ideas is when any one of them is *uncertain* or *undertermined*,"[1] but adds that this confusion still is due to the idea's relation to the name "because a mutable idea (if we will allow it to be *one* idea) cannot belong to one name rather than another, and so loses the distinction that distinct names stand for." The clause in parenthesis is the significant one from our standpoint, since it shows that the confusion reigns during, what Locke is almost on the point of calling, the ideating *process*.

Locke's formal definition of confusion as due to application of names is not, then, the one really at work in his further account. This he finds in the relation of the idea to the act. The attributing of confusion to naming simply transfers the problem, or rather restates it in other terms. Why, when we *know* that the term "spotted beast" is applicable to leopard, lynx, and so forth, should it be confusing? The fact is that it would be confusing if it were not so applicable, for that is just what is expected when the idea "spotted beast" is actually in use. Here Locke is finding the source of confusion in the universal character of the idea and name, whereas it is just this character that delivers us from confusion, since it is that which unifies what would otherwise be a chaotic activity, into a definite channel of discharge.

[1] Book II, 29: 9. Italics mine.

VII.

ADEQUATE AND INADEQUATE IDEAS.

Locke distinguishes the adequate idea from the real idea. As formally defined, the real idea is one to which there is something corresponding in some way in the world of things. Adequate ideas are "those which *perfectly* represent those archetypes which the mind supposes them taken from, which it *intends* them to stand for, and to which it refers them."[1] An idea may thus be real and still be inadequate. For, while it may *correspond* to something in the world of things, it may not *perfectly represent* it.

First, Locke continues, the simple ideas are adequate "because being nothing but the effects of *powers* in things . . . . they cannot but be correspondent and adequate to those powers." Here the adequacy is that of the cause to its effect. It is in no sense adequacy as a copy.

Second, turning to the complex ideas, the modes and relations are all found to be adequate, because they have no archetypes, and consequently, "not being intended for copies of things really existing but for archetypes to rank and dominate things by, they cannot want anything."[2]

Third, complex ideas of substances are all inadequate. For "desiring to copy things as they really do exist and to represent to ourselves that constitution on which all their properties depend, we perceive our ideas attain not that perfection which we intend."[3]

The problem here once more is to maintain a consistent standard for adequacy and inadequacy, and the difficulty, as with the other distinctions, lies in the attempt to classify ideas without reference to their function in the judgment. In order to do this, Locke has again to seek some basis intrinsic in the idea as such. And yet, here too, as elsewhere, the functional character of the idea, that is, its character as a part of the process of reaching results, cannot be entirely suppressed. This appears, from the very start, in the part played in Locke's account by "*intention.*" As appears from the passages above quoted, in all three cases — that of the simple ideas, the complex modes and relations, and the ideas of substances — the inadequacy is defined, not as consisting in the mere lack of full agreement with the archetype,

[1] Book II, 31 : 1. Italics mine. [2] Book II, 31 : 2. [3] Book II, 31 : 3.

but in this lack when the full agreement is "*intended.*" The inadequacy, then, lies in the failure of the idea to do what it is *intended* to do; and agreement with the archetype is simply a formal statement of *what* is intended. We say a formal statement, for further examination shows that Locke does not adhere to this as a statement even what is actually "intended."

In the first place, no agreement with an archetype is intended in the cases of modes and relations. For these there are no archetypes. True, this is just the ground of their perfect adequacy, according to Locke, but this adequacy is not that of an agreement with an archetype. In default of the archetype, Locke further finds the basis of adequacy in the fact that "the mind acquiesces in them, is *satisfied* in them, finds nothing wanting in them." To be sure, the ghost of the archetype does loom up in the background when Locke says that the reason for our satisfaction with the perfection of the idea "triangle" is that "the mind does not conceive that any understanding hath or can have a more complete or perfect idea of that thing it signifies by the word triangle, *supposing it to exist*, than itself has in that complex idea of three sides and three angles;"[1] *i. e.*, there really is no archetype for the idea "triangle," yet we are satisfied with its adequacy, because, *supposing there were* such an archetype, we cannot conceive of a more perfect idea of it. It would seem we must regard this passage rather as a semi-figurative emphasis of the satisfaction felt in the idea than as a serious explanation of it. We shall return to the positive significance of this further on. Suffice it here to say that, had Locke given the matter one more turn, inferring the adequacy from the satisfaction instead of explaining the satisfaction from the adequacy, he would have gotten rid of the archetype altogether.

When we come to the treatment of the simple ideas and the ideas of substance, the agreement with the archetype seems equally unavailable as a standard of adequacy. In the first place, the criteria for the two classes are quite different. For the simple idea the archetype is merely the power in the thing which is supposed in some way to produce the idea in us, and the agreement is a mere correspondence, an abstract parallelism. But for the complex idea of substance, the kind of agreement intended is an exact copy of "things as they really do exist." Thus the simple idea by the *same standard* as the complex one is just as inadequate as the latter; and, conversely, the complex idea judged by the same standard as the simple idea, *i. e.*, that of mere abstract

[1] Book II, 31 : 3.

correspondence, is just as adequate. In other words, on the basis of the same "*intention*," both are equally adequate or inadequate. It is only by changing the intention that the one class remains adequate and the other inadequate.

Two further difficulties arise with the archetype as a standard of adequacy, in the case of the ideas of substance: (1) How is it to be known that the idea does not include in itself all the elements in the archetype, if there be not present already an idea of all of them? (2) Supposing it can be known in some way that the idea not only does not but cannot possibly agree with the archetype, how could such an agreement, known to be utterly impossible, continue to be "*intended*"?

This question calls for a word concerning the relation between knowledge and will. Professor James says:[1] "I will to write and the act follows. I will that the distant table slide over the floor towards me and it does not;" and yet, he says, "it is as true and good willing as when I will to write." Now, we do speak of willing or intending an event, for example, that the table shall be moved across the floor, without knowing what the steps in accomplishing it are to be; *i. e.*, the means to the end may be very generally and vaguely defined. However, just in proportion as the means are indefinite, the end is also undefined and tentative. To be sure, it is frequently said: "I intend to do so and so; I do not know *how* I am to do it, but I shall do it somehow." Now, an analysis of such a case shows that the very strength of the determination must involve belief in the *possibility* of the act, and therefore a conception of at least the range within which the means are to be found, though not necessarily a conception of their location and relation within that range. When the end begins to involve means outside this range, the act becomes at once, as Professor James defines it in the first part of his chapter on "Will," *wishing*, not willing. The intention of an act believed to be absolutely impossible seems, itself, to be both a logical and psychological impossibility. Professor James goes on to cite the case of the paralytic who intends to move his paralyzed limb. But does not the parylytic, here, forget his paralysis? Does he intend to move while thinking at the same time of the impossibility of the movement? And so does not the lunatic who intends to drink up the ocean think he sees a way to do it? In a footnote on the above passage, Professor James says: "The reason people find themselves unable to will the movement of the table is because they are unable to abstract from the thought of the impossi-

[1] *Psychology*, Vol. II, p. 560.

bility of it"—a feat, he says, which he finds easy to perform. But it would seem that the kind of abstraction demanded here would amount to the paralytic's forgetfulness. In *consciously* abstracting from a content, we do not get rid of it as we do in forgetfulness. In conscious abstraction, the disregarding is but another way of regarding, while in forgetting, the content drops out entirely.

The bearing of this upon Locke's statement is as follows: The idea is never "*intended*" to do anything, because the idea *is* itself the intention to do; and the idea as intention is adequate or inadequate according as it is possible or impossible to act under its direction. The moment conflict occurs within the activity controlled by the idea, both the activity and the idea break down, and this constitutes the inadequacy of the whole act and of the idea as a part of it. Inadequacy cannot, therefore, get attached as an attribute to the isolated idea, for the moment the act breaks down, the idea also disintegrates.

Returning to Locke's example, the reason he finds the idea "gold" less adequate than the idea "triangle" is because the process of producing the full concrete experience "gold" has not been fully ideated, and is therefore not under full control. There are still involved in the experience of gold factors not yet analyzed out and brought to consciousness. The inadequacy of the idea "gold" means, therefore, that the present idea of gold does not include within it all the factors of the process of producing gold. It is only as related to some desired better way of producing the experience "gold"—*e. g.*, its production in the laboratory instead of digging for it—that the idea as at present constituted is inadequate.

Here, too, is the interpretation of the archetype. The archetype is just this unanalyzed part of the activity. It is that part of the process of production as yet uncontrolled by ideas. Let us note, too, that in Locke's account the inadequacy does not lie in the *lack* of correspondence with the archetype, but rather, speaking in Locke's terms, in the correspondence with it, *i. e.*, in the fact that there is an archetype at all for it to correspond with. For, as we have seen, the idea "triangle," which has perfect adequacy according to Locke, has no archetype; that is, there is no unanalyzed, unideated activity involved in it. The ideal and the real, *i. e.*, the archetype, have coalesced. Inadequacy, then, does not belong as a quality to the idea as a substance—as a psychical thing—but to the idea as a process. It means that the ideating process is not yet complete in the act of which it is a part.

VIII.

REAL AND FANTASTIC IDEAS.

THE treatment of ideas as true and false, real and fantastic, properly belongs, even from Locke's own standpoint, to Book IV, where ideas are treated as knowledge, that is, as elements in the judgment. Locke recognizes this in the case of the classification of ideas into "true and false," making the heading of the first paragraph in this chapter, "Truth and Falsehood Properly Belong to Propositions." The same is true of "real and fantastic." However, as a sort of introduction to Book IV, we may comment briefly on this latter classification.

The "real" idea is one which conforms to its archetype; the "fantastic" is one which does not.[1] Only two classes of ideas have archetypes: (1) simple ideas must have, because they are not made by us, and therefore must have a source outside; (2) complex ideas of substances have archetypes just because they are ideas of substances; that is, because they are "made, all of them, in reference to things outside."[2] Mixed modes and relations cannot be said to have archetypes in the sense in which simple ideas and ideas of substances have, because they are wholly the work of the mind. Yet there are certain conditions under which they may be pronounced fantastic. These conditions, reversing Locke's order, are as follows: (1) To be real "they must have a conformity to the ordinary signification of the *name* that is given them, as if a man would give the name 'justice' to that which common use calls 'liberality.' But this fantasticalness relates more to propriety of speech than to reality of ideas."[2] (2) The simple ideas of which the mixed mode is composed must be consistent. And the standard of consistency Locke makes the "possibility of existing conformable to them."[3]

Once more we see that Locke does not succeed by a simple direct observation of the idea in discovering the attributes "real" and "fantastic" in the idea itself. They turn out to be, even on Locke's own showing, relations of the idea to the whole act in which it functions.

First, what one might call the "nominalistic reality" of the mixed modes, such as justice, liberality, etc., manifestly does not attach to

[1] Book II, 30:1. [2] Book II, 30:5. [3] Book II, 30:4.

the content, but to the *relation* of the idea to its *name*. The mixed mode in itself considered "is not capable of any deformity, being made with no reference to anything but itself."[1] Thus, as Green puts it, "in moral and mathematical knowledge, their ideality itself is the reality."[2]

The other test of reality as applied to the mixed mode is that it must be made up of consistent, simple ideas; but the test of consistency between these simple ideas is not found by any process of direct comparison, but is the "possibility of existing conformable to them." And if we apply this to the examples of mixed modes which Locke is using as illustrations, viz., justice and liberality, "the possibility of existing conformable to them" seems to translate into "the possibility of using the idea in reaching some result;" *i. e.*, "the possibility of existing conformable" to it means the possibility of acting conformably to it, and the only conformity there can be between an act and an idea is that the latter be a part of the act.

The meaning of "conformity to existence" comes out more explicitly in discussing the reality of the simple ideas and the ideas of substance. After stating that reality consists in conformity to the archetype, Locke's next step is to interpret this conformity. This implies, not a copy, nor even resemblance, but a mere connection, "a steady correspondence" with the power in the thing which produces the idea. The passage reads:

> . . . . For these several appearances being designed to be the mark whereby we are to know and distinguish things which we have to do with, our ideas do as well serve us to that purpose, and are as real distinguishing characters whether they be only constant effects, or else exact resemblances of something in the things themselves; the reality lying in that steady correspondence they have with the distinct constitutions of real beings. But whether they answer to those constitutions, as to causes or patterns, it matters not; it suffices that they are constantly produced by them. And thus our simple ideas are all real and true, because they answer and agree to those powers of things which produce them in our minds; that being all that is requisite to make them real, and not fictions at pleasure. . . . .[3]

Thus, so far as the simple idea is concerned, the thing is simply a bundle of powers. Elsewhere, to be sure, these powers are reduced to atoms and molecules, but it is interesting to note how ideal the "thing" becomes even in Book II.

[1] Book II, 30: 1.

[2] *Works*, Vol. I, pp. 94, 98. See also *Essay*, Book IV, 4: 6.

[3] Book II, 30: 2.

Now, the only way of knowing with *what* power in the thing the idea corresponds, Locke tells us in the next chapter, is to apply the idea in actual experiment and see how it works.

> We can never be sure we know all the powers in any one body until we have tried [under the direction of the idea] what changes it is fitted to give or receive from other substances in their several ways of application.[1]

This statement virtually transfers the power from the thing to the "real" idea. That is, the "real" idea as distinguished from the mere idea is the idea which will control action. Its reality lies, not in the mere *correspondence* with a power, but in the fact that it is the powerful, the efficient idea. The "real" idea becomes a "mere" idea when, having performed its function, the very action which it has unified and directed results in a new situation to which it is no longer adequate. So witches and goblins, the earth with the sun moving around it, are mere ideas, while the ideas of disease germs and the Copernican system are real ideas.

The reason Locke could not reverse his statement of the real idea, making it the idea which gives power instead of the idea which a power gives, was that the power of the idea was as yet for Locke unconscious power. The power in the idea had not yet been analyzed out, and so was located externally, just as the baby locates his feet externally until he pushes the analysis of his sensations and movements farther. And the reason the power of the idea had not yet come to consciousness lay in the fact that the new scientific movement had not been in progress long enough to get hold of its own method. Construction was still interpreted as a mere "finding," a mere discovery of facts that had always been lying about, but, hitherto, unnoticed.

Concerning the reality of the complex idea of substance Locke here says :

> Our complex ideas of substance being made all of them in reference to things existing without us, and intended to be representations of substances, as they really are, are no further real, than as they are such combinations of simple ideas as are *really united*, and *co-exist in things* without us. On the contrary those are fantastical which are made up of such collections of simple ideas as were really never united, never were *found together* in any substance.[2]

The full discussion of the psychology of the "thing" in relation to the idea occurs in the treatment of Book IV. It will suffice here to point out a difficulty from Locke's standpoint, and the functional implication. If Locke means here that the combination of simple ideas which

[1] Book II, 31 : 8. Brackets mine. [2] Book II, 30 : 5. Italics mine.

make up the complex one is *found* as a *combination* in the thing, then he abandons, as was pointed out in the discussion of simple and complex ideas, his definition of complex idea as a mental construct and makes it as given as the simple idea. Further, Locke, of course, has trouble in testing this agreement of the complex idea with the thing. In the "particular" case the test is "the observation of the senses." In the "general" case it is the necessary connection of the simple ideas themselves constituting the complex one.

> For this co-existence (between the idea and the thing) can be no further known than it is perceived; and it cannot be perceived but either in particular cases, by the observation of the senses, or, in *general by the necessary connexion of the ideas themselves.*[1]

Here, in the "general" case, which is the one for which the appeal to the thing is really made, instead of testing the reality of the idea by the thing, the reality of the thing is tested by character of the idea. This means essentially that "thing" is simply a name for the conditions of an efficient idea — an idea which can direct action to the realization of desired ends.

[1] Book IV, 3: 14.

IX.

ESSENCE.

In Locke's treatment of "Essence" in Book III the functional nature of the idea gets an almost explicit recognition. The chapter abounds in passages which might serve as excellent statements of the thoroughly functional character of thought. Take such a passage as this:

> It is evident then that the mind by its free choice gives a connexion to a certain number of ideas, which in nature have no more union with one another than others that it leaves out: why else is the part of the weapon, the beginning of the wound is made with, taken notice of to make the distinct species called stabbing, and the figure and matter of the weapon left out? I do not say this is done without reason, as we shall see more by and by; but this I say, that it is done *by the free choice of the mind, pursuing its own ends;* and that, therefore, these species of mixed modes are the *workmanship of the understanding:* and there is nothing more evident than that, for the most part, in the framing these ideas, the mind searches not its patterns in nature, nor refers the ideas it makes to the real existence of things, but puts such together as may *best serve its own purposes*, without tying itself to a precise imitation of anything that really exists.[1]

It will be observed that it is the complex abstract ideas that constitute the "nominal," *i.e.*, the teleological as opposed to the "real" essence; the simple ideas as the material of the combinations being still given. And this, as Green says, "is what renders the immortal third book such a web of contradictions." In Book II, while the complex ideas are formally defined as those "made by the mind," in the further discussion it turns out that all those of substances "which have most to do with the affairs of life" are "*found* in things." But here the antithesis is sharply drawn. Essence, in the only sense in which we can know or make any use of it, is wholly a construction "made by the mind pursuing its own ends." To be sure, the ghost of the unknown "real essence" hovers in the background, enough to frighten these "ends" from pre-empting the whole field, but it is almost recognized as a ghost. And such recognition is always the beginning of the ghost's end. Further on, it is true, the ghost again assumes decidedly substantial proportions, but that it is not in good standing here is shown in such passages as the following:

[1] Book III, 5:6. Italics mine.

The supposition of essences that cannot be known, and the making of them, nevertheless, to be that which distinguishes the species of things, is so wholly useless and unserviceable to any part of our knowledge, that that alone were sufficient to make us lay it by, and content ourselves with such essences of the sorts or species of things as come within the reach of our knowledge.[1]

Such passages show the influence of the scientific movement upon the philosophic thought of Locke's time. But as yet the latter was not conscious of this influence and of its significance. Hence such thoroughly functional characterizations of essence as the one just quoted side by side with the old scholastic interpretations. It is not our purpose here to trace out all these inconsistencies of statement. Green has left very little to be done in that direction. We are concerned with only those contradictions and inconsistencies which show most clearly the outcropping of the teleological vein. We shall not, therefore, follow Locke in all his oscillations between the real and nominal essence, but shall confine our observations to his treatment of the nominal essence as teleological, and its bearings on other parts of the *Essay*.

The passages above quoted show clearly that Locke felt the discrepancy between the old scholastic fixed essences and the kind of essence demanded by life that was moving as life then was. He sees that in order to be an instrument adapted to practical needs the essence must be constructed with reference to those needs. A tool in order to be an efficient instrument of construction must itself be constructed with reference to the particular work it is to do. But while Locke felt the inadequacy of the scholastic essence and the need of a working essence, he was neither able to locate exactly the difficulty in the old conception of essence, nor to realize fully the character and function of the new. This appears in his account of both (1) *why* and (2) *how* the essence is constructed.

As to the motive for constructing the essence, Locke says:

They [the ideas of essence] are always made for convenience of communication, which is the chief end of language. . . . . it suffices that men make and name so many complex ideas of these mixed modes as they find occasion to have names for in the ordinary occurrences of their affairs.[2]

While the essence is thus made thoroughly functional, it is so, not because it is a part of the functional process of ideation, but as a sort of secondary process, through which ideas already *given* are taken, in

[1] Book III, 3: 17. [2] Book III, 5: 7.

order to make them ready for communication. In other words, all the work of abstraction and synthesis takes place, according to Locke, to meet the practical needs of communication only. But even so, they are processes performed *upon* ideas, and are not involved in idealization as such. How this making the secondary process functional virtually carries with it the functional construction of the primary given ideas will be pointed out in the account of the method of constructing the essence.

The significant point in this statement of the motive for constructing essence is the relation of thought to language and communication. As the statement reads, the essence idea is constructed merely as a matter of economy of time and energy in communicating with our fellows. Even for this it does not appear essential. Aside from the use of language as a means of communication, Locke sees no demand for ideas of essence.

Here again, in the external character of the relation between the idea and language, the merely formal character of Locke's functional interpretation of essence appears. Now, perhaps there is a sense in which "communication" may be regarded as creating the *demand* for language as the carrier of thought. But it is a sense which includes communication with one's self, that is, the very process of thinking itself. In this sense thought must be "communicated," that is, embodied in language, as well in one's own thinking as in communing with another. In this connection, Bosanquet says :

> The "convention" or agreement which has been said to give language its meaning, would be the same thing between other persons and me that the employment of significant signs is between me, so to speak, and myself. It is as wonderful and as much a proof of "convention," that is, of the power to "agree" that "goodness" should mean the same to me yesterday and today, as that in this sentence it should mean the same to me and my reader.[1]

In this broad sense, language, therefore, is not the carrier of thought merely as communicated to another, but of thought as thought. If idealization is the process in which a reduced form of an act carries the value, the meaning of the whole, and if language is fundamentally this reduced form, then language is an inherent part of the idealizing process. Usually, even where language is defined as "a reduced form of an act," it is not recognized that it becomes *by that very fact* the carrier of the idea. It is usually spoken of as if being a survival of past action, and, useless as present action, it were conveniently

[1] *Logic*, Vol. I, p. 15.

pressed into service as "a sign of ideas." But the reason it can serve as the sign of an idea, as the carrier of meaning, is just because *the meaning is the value of the whole, of which the sign is the reduced form.* The fact that in even a majority of particular cases now no qualitative similarity between the sign and the meaning directly appears is not against, but rather for, the principle. It means that, in its function as a sign, the less qualitative value an act has in itself, the better sign it is. In so far as it is of interest in itself, it fails to point away from itself, which is just the business of a sign. The arbitrary character of language means, therefore, that these reduced forms have been perfected in their function as *signs* by dropping out their value in themselves. It does not mean a fundamental divorce between thought and language. It is the case again of a greater structural separation for the sake of greater functional unity.

The process of constructing the nominal (or functional) essence is, Locke says, one of "leaving out those qualities peculiar to each [individual] and retaining a complex idea made up of those that are common to them all."[1] First, we may note again that the simple idea is here practically as much under control, therefore functional, as the essence idea itself. Indeed, it must be so in order that the essence idea may be constructed. In Book II Locke says the simple idea is one the mind cannot make for itself and cannot help having in the presence of the object. But here the mind leaves it out at will, and thus practically makes and unmakes it. Of course, Locke would say—in fact he has said—that this is merely a matter of shifting attention. The idea is *there* all the time. The individual object, on the other hand, which is here so complex that the complex idea of essence is abstracted from it with all the "peculiar ideas" to spare, is regarded as given! Thus again the simple and complex have changed places, and this because, the distinction of simple and complex being one of use, the same content may function as either simple or complex. Hence the contradiction when the distinction is made one of fixed content.

The main point for us here, however, is the fact that in making the essence, the universal, functional, a functional interpretation of the individual is involved, and in this wise. Locke says that the essence is constructed by leaving out the peculiar and retaining the common qualities of a number of individuals. To know which are common we have but to inspect the individuals and tabulate. Now, this is well enough so long as the group of simple ideas constituting the individual

[1] Book III, 6:32.

stays fixed and given, as they are here regarded as doing. But in chap. 6 Locke insists most strenuously that this group of qualities constituting the individual can be kept fixed *only with reference to this very essence*. The passage should be given in full:

4. That essence, in the ordinary use of the word, relates to *sorts*, and that it is considered in particular beings no further than as they are ranked into sorts, appears from hence; that, take but away the abstract ideas by which we sort *individuals*, and rank them under common names, and then the thought of anything essential to any of them instantly vanishes; *we have no notion of the one without the other*, which plainly shows their relation. It is necessary for me to be as I am; God and nature has made me so; but there is nothing I have is essential to me. An accident or disease may very much alter my colour or shape; a fever or fall may take away my reason or memory or both, and an apoplexy leave neither sense nor understanding, no, nor life. Other creatures of my shape may be made with more and better, or fewer and worse faculties than I have; and others may have reason and sense in a shape and body very different from mine. *None of these are essential to the one or the other, of any individual whatever, till the mind refers it to some sort or species of things;* and then presently, according to the abstract idea of that sort, something is found essential. Let any one examine his own thoughts and he he will find that as soon as he supposes or speaks of essential, the consideration of some species, or the complex idea signified by some general name comes into his mind; and it is in reference to that that this or that quality is said to be essential. So that if it be asked, whether it be essential to me or any other particular corporeal being to have reason? I say, no; no more than it is essential to this white thing I write on to have words in it. But if that particular being be to be counted of the *sort* man, and to have the name man given it, then reason is essential to it, supposing reasons to be a part of the complex idea the name man stands for; as it is essential to this thing I write on to contain words if I will give it the name treatise, and rank it under that species. So that essential and not essential relate only to our abstract ideas, and the names annexed to them; which amounts to no more than this, that whatever particular thing has not in it those qualities which are contained in the abstract idea which any general term stands for, cannot be ranked under that species nor be called by that name, since that abstract idea is the very essence of that species.[1]

From this it appears that the individuals in order to be constant enough to furnish a group of common attributes must be kept so by this very teleological essence for which they are supposed to be furnishing the elements. Thus the individual is no less and no more functional than the essence — the universal — since each is necessary to the other.

[1] Book III, 6: 4. Italics mine.

It is the effect of this functional interpretation of the essences or universal upon the individual that finally forces Locke back upon the unknown real essence. In admitting the practical character of the essence idea, Locke has thereby so reduced the individual to a "merely practical" affair that it is about to lose what, theoretically, still constitutes for him true ultimate reality as opposed to merely "practical" reality. It did not, it could not, occur to Locke, with his heritage of scholasticism and his lack of science, in the modern sense of that term, that the *practical reality* might itself be the *ultimate* reality.

X.

LOCKE'S VIEW OF KNOWLEDGE IN BOOK IV.

In Book IV Locke comes to close quarters with his problem. The ideas which in Books II and III have been analyzed and classified as the mere material for knowledge are now to be transformed into knowledge. We have seen some of the difficulties Locke encountered in attempting to describe and classify this material apart from its use. In general, this difficulty was the lack of any basis for his distinctions and classifications. Simplicity and complexity, distinctness and confusion, adequacy and inadequacy, were all found to be, not qualities of the ideas as independent existences, but modes of the functioning of ideas in the act of judgment. From this we should expect to find a correlative difficulty in any attempt to transform ideas into knowledge; the difficulty again of finding any criterion of validity for knowledge thus constituted. The process of transforming ideas into knowledge, as Locke first states it, is one of combining these ideas "according as they agree or disagree."[1] However, in the statement of the kinds of agreement and disagreement — viz., identity or diversity, relation, coexistence, and real existence — which Locke at once makes, he introduces in the last class a sort of agreement and disagreement difficult to bring under the general statement. The agreement or disagreement of "real existence" is the agreement or disagreement, not of ideas with each other, but with "things without the mind." To be sure, Locke says that he will use idea as meaning either "an image in the mind" or "qualities in the object." But, as Green observes, this confession of the equivocation does not prevent its consequences, which are nothing less than the entire web of difficulties into which Locke later falls.

We have, then, these two definitions of the judgment to consider: one stating it to be "the agreement or disagreement of ideas with each other" as they are "in the mind," the other defining it as "the agreement or disagreement of ideas" with "things without the mind." The whole of Book IV turns on these two definitions of knowledge and their relations to each other. We shall see how Locke, starting with the conception of knowledge as the agreement or disagreement of

[1] Book IV, 1: 2.

ideas with each other, is forced into the other conception, is then driven back to the first, and concludes with an external division of territory between the two conceptions; each conception, however, still denying the claims of the other.

Beginning with the definition of knowledge with which Locke starts — "the agreement or disagreement of ideas with each other" — we must ask at once: What is meant by "agreement or disagreement," and what is their criterion? Locke's illustrations are as follows:

> When we know that white is not black, what do we else but perceive that these two ideas do not agree? When we possess ourselves with the utmost security of the demonstration, that three angles of a triangle are equal to two right ones, what do we more but perceive that equality to two right ones, does necessarily agree to, and is inseparable from the three angles of a triangle?[1]

If the disagreement here means only that the idea "white" is not the idea "black," but simply that they are different ideas, since judgment, according to Locke, involves two ideas, every judgment would have to express this much and this kind of disagreement. Even the triangle judgment, which is given as example of agreement, must, to have any meaning, possess this much disagreement. Unless the ideas "triangle" and "two right angles" are different ideas, there could be, according to Locke, no judgment. Again, the problem here, as in Books II and III, is: So long as we are considering a set of ideas, regarded as so many psychical "things," what possible basis is there for agreement or disagreement? Each idea is simply there — a definite and fixed existence. White is white; black is black; that is the end of it. There can be no meaning in either opposition or agreement. Here Locke has come upon the problem of "unity and difference," of "the one and the many," essentially in the form in which the Greeks and in which his contemporary, Spinoza, encountered it. And his difficulty is the same as theirs. In any given content, whether conceived as "psychical" or "physical" or as an abstract "substance," which is both or neither, there appears no way of reconciling these categories. Two "things," psychical or physical, cannot become one, nor one become two, nor can they agree or disagree as "things." They can, however, have a functional unity as factors working to a common end.

Locke's acknowledgment of this appears in the conclusion, which he is not long in reaching, that this sort of agreement and disagree-

[1] Book IV, 1: 2.

ment, except in the case of mathematical and moral judgments,[1] yields only "trifling knowledge." It is very "certain" knowledge, to be sure, but it is as "useless" as it is certain. All judgments concerning substances — and these are the judgments which, Locke says, "have most to do with the affairs of life" — must consist, not merely of a reference of ideas to each other, but of a reference to "real existence" — to "things."

> Gold is malleable is true and certain; but there is here nothing affirmed of gold but that that sound stands for an idea in which malleability is contained and such a sort of truth and certainty as this it is to say a centaur is fourfooted.[2]

And again:

> It will be altogether as true a proposition to say all centaurs are animals, as that all men are animals; and the certainty of one as great as the other. For in both propositions the words are put together according to the agreement of the ideas in our minds; and the agreement of the idea of animal with that of centaur is as clear and visible to the mind, as the agreement of the idea of animal with that of man; and so these two propositionsa are equally true, equally certain. But of what use is all such truth to us?[3]

It is, then, in the attempt to keep the judgment in its place in "the conduct of life" that Locke is forced to his second statement of it. From his idealistic standpoint Locke might say here that having ideas is a very important part of living. He might go even further and say that all else is for the sake of having ideas. But even so, it still may be that this ideal content, supreme in worth, must get its worth as a part of a larger whole. To use a somewhat Kantian figure, if thought be king, still must the king serve.

The second definition of the judgment to which Locke is driven by this necessity of making thought a factor, a function rather, in larger process, is as follows:

> Wherever we perceive the agreement or disagreement of any of our ideas there is *certain* knowledge; and wherever we are sure those ideas agree with reality of things there is certain *real* knowledge.[4]

As stated above, it is not the aim here to trace up the entire web of internal inconsistensies and difficulties which Locke weaves from this point. It is enough for present purposes to point out some of the well-known problems and their significance from the standpoint of the discussion.

[1] This exception of mathematical and moral judgments Green calls "a special act of grace." It has, however, a positive significance from Locke's own standpoint which will be noted further on.

[2] Book IV, 6:9. [3] Book IV, 5:7. [4] Book IV, 4:18. Italics mine.

Continuing the sketch of Locke's experience with this second statement of the judgment, an especially acute difficulty arises at once in reconciling it with his previous description of ideas of substances. These have been described as "complex," and, therefore, made by the mind out of given simple ones. Allowing for the moment the simple ideas to represent in some way "real existences," how can these mind-made combinations preserve such a correspondence, to say nothing of being "copies of things as they really are"? Locke begins his treatment of this problem by simply giving up at first the mind-made character of the complex idea.

> Herein therefore is founded the reality of our knowledge concerning substances that all our complex ideas of them must be such and such only as are made up of such simple ones *as have been discovered to co-exist in nature.* . . . . Whatever simple ideas have been found to co-exist in any substance these we may with confidence join together again; for whatever have once had an union in nature, may be united again.[1]

Taken as they stand, these passages, as many others similar, make the judgment given outright. Locke, too, soon discovers this, and modifies the case by regarding the connection of ideas as given only as a *suggestion*—as an hypothesis, whose complete agreement with things has yet to be found by "further observation of the senses." This, however, brings more difficulties than ever. If this connection of ideas is suggested by the thing, how can there be any need of verification? If the connection be really in the thing, why and how should the thing ever suggest a wrong combination of ideas? And, waiving this, how is it to be known when this connection of ideas has been truly found? How is one to know when one has observed long enough to be sure of it? In other words, what is the test of verification?

These questions do not greatly trouble Locke in what he calls the "present instance" or the "particular case." One who does not know a thing when he sees it is for Locke a subject for psychiatry rather than epistemology. But when he attempts to find the universal in this kind of a particular case, he comes into great difficulty, and ends by pronouncing the discovery impossible. He finds that this verification through sensation yields certainty "only while the sensation lasts."

> If I saw such a collection of simple ideas as is wont to be called man existing together one minute since and am now alone, I cannot be certain

[1] Book II, 4: 12. Italics mine.

that the same man exists now since there is no necessary connection of his existence a minute since with his existence now. . . . . And therefore though it be highly probable that millions of men do now exist this is but probability not knowledge.[1]

When we ask after the ground of this probability, Locke refers us, metaphysically, now to the thing as "Real Essence," now to the "uniformity of nature," and finally to the Deity. Psychologically he refers us, in a sort of parenthetical passage, to that which Hume is to make his corner-stone, the principle of habit. But Locke sees that, as he conceives them, all these grounds lie outside the process of knowledge, and hence constitute no logical ground of probability. He concludes by saying that "certainty [*i. e.*, logical certainty] in these matters we must not pretend to." There is, however, a "practical certainty" which is "enough for the purposes of life."

The outcome is, then, that the second class of judgments, those which "have most to do with the affairs of life," are not judgments at all in the sense of knowledge. They are guesses which have a practical value guaranteed by some outside power. There is no inner connection between the subject and predicate, such as there must be in a judgment worthy the name of "knowledge." In this conclusion the opposition between theoretical certainty, on the one hand, and efficiency in the conduct of life, on the other, comes into full relief. The judgment that will stand the test of knowledge is, with the exception of mathematical and moral propositions, "trifling." The useful judgment is theoretically uncertain. Most of the affairs of life, then, are to be conducted on judgments which cannot be called knowledge.

He that will not eat till he has demonstration that it will nourish him, he that will not stir till he infallibly knows the business he goes about will succeed, will have little else to do, but sit still and perish.[2]

That is to say, we are willing, nay, we must stake our lives on such judgments as "gold is soluble in aqua regia," but with no more logical warrant than upon the throw of a die. Knowledge is to be sought for the conduct of life. But most of the affairs of life are found to be conducted on probability; and "probability is not knowledge."

As Kant saw, at the root of all these difficulties and of this final paradox lies, in psychological terms, a lack of organic connection between sensation and ideas; in logical terms, a want of connection between subject and predicate — the lack of an organic copula. The distinction and confusion of simple and complex ideas; Locke's insistence

[1] Book IV, 11: 8. [2] Book IV, 14: 1.

on the "trifling proposition" as the type of knowledge; the uncertainty of the useful judgment; the final appeal to the real essence and the Deity as the ground of probability — these all arise from this lack of connection, and at the same time are attempts to supply it. Thus Locke's first attempt to find knowledge in the connection of ideas is precisely an attempt to establish the connection between subject and predicate by bringing them together in a common process. With the subject given by the thing and the predicate given by the mind, Locke is unable to effect a connection, hence he attempts to state the entire judgment in terms of ideas — *i. e.*, in terms of the predicate only. This is, of course, an attempt to get a unity by leaving out one of the factors to be unified. The result is a "trifling" judgment — "trifling," because it really is not a judgment at all. It is merely a predicate without a subject, a "what" without a "this." Locke felt that by getting both his subject and predicate into terms of the one process of ideation he had the kind of unity demanded in knowledge. He finds instead that he has a unity which will admit of no differences or differences that will admit no unity. That is, once more, if the ideas are really different in meaning, then one can never agree with the other in the sense in which Locke understands agreement — in the sense of one being a copy of the other. If there is no difference in meaning, then the predicate merely repeats the subject. The tenacity with which Locke holds to these "trifling propositions" as the type of knowledge shows an underlying sense of the need of unity with which Locke is not usually credited.

Locke's second statement of the judgment as "the agreement or disagreement of ideas with things" is then his attempt to supply the predicate — the connection of ideas — with a subject. He is taking up again the factor discarded in the first definition. It must be observed here — a point that frequently escapes notice — that in this second statement, as he first makes it, Locke means by this agreement with "things" the reference, in quite the modern fashion, of this entire connection of ideas — "gold-soluble-in-aqua-regia" — as one ideal content to a reality beyond themselves. Locke's ideal content, to be sure, does not have the unity which Mr. Bradley's has in his definition of the judgment as "the reference of an ideal content to a reality beyond the act." [1] Locke's ideal content is still a compound. But in so far as it is a reference to a "reality beyond the act" for a subject, the two statements agree. It may be noted that there is also a second state-

[1] *Principles of Logic*, p. 10.

ment of the judgment in Mr. Bradley's logic, in which it is defined as "the reference of an ideal content to reality as it *appears* in perception."[1] Here, as in Locke, the change in statement is made in the process of trying to work reality and idea into a closer organic connection. The movement, however, is from the opposite side of the problem. In the second statement Locke is getting his ideas into touch with reality in the form of the "thing" as sensation, while Mr. Bradley is getting reality into touch with the ideas by having it "*appear* in perception."

Forced by the trifling character of the judgment as first defined into seeing the general necessity of getting his ideal content realized — of finding a true subject for the judgment — the details of the problem are now to be dealt with. At this point Locke, also, declares that this reality — the "thing" — must appear in sensation. Here Locke feels, too, though he does not, of course, recognize it, precisely the same problem with which modern logic is wrestling. If the thing *appears* in sensation, it is yet not *known* except through the connection of ideas. Indeed, it cannot get even an appearance, as Kant saw most of the time, except through the ideal content; *i. e.*, through the connection of ideas. Moreover, there is still no connection yet established between the sensation and ideas whereby the interpretation of the former by the latter has any guarantee. The old question of how the connection of ideas is to "represent" this reality appearing in sensation seems still competent.

Locke's procedure at this point is as significant as it is naïve. This is where he discovers that reality — the "thing" — gives not only sensation, but the connection of ideas as well. This is where the ideas are "found together in things." It is significant here that, instead of connecting reality with ideas through sensation, Locke connects sensation and ideas through reality. In other words, reality — the thing — instead of being the subject, is here the copula of the judgment. However, Locke cannot hold this position very long, because, with his conception of reality as an already constructed thing or system of things, he finds that his formulation makes the entire judgment absolutely "found" in the thing, just as the first judgment was found in the mind. That is, Locke finds that he has simply exchanged the "trifling" judgment composed of "ideas in the mind" for another equally "trifling," composed of a connection of ideas "found" in the thing. It is true, Locke does not, as he ought consistently, find this judgment given by the thing "trifling;" but he does find it "uncer-

[1] *Ibid.*, pp. 50 ff. Italics mine.

tain." This, however, shows that he does not continue to regard the ideas as really "found together in the thing." If he did, his problem would be, not to find certainty, but to account for the uncertainty, the doubt, the struggle, involved in the attainment of knowledge. There should be no difficulty in the agreement of ideas with the thing if they really were found in it. What could they do but agree?

Locke's real problem here, therefore, is not to reach certainty on this basis, but to change the basis in order to prevent the judgment from being "found" ready made, either "in the mind" or "in the thing." He must once more introduce the doubt and struggle which so manifestly belongs to the process of knowledge. Locke's way of doing this is very simple. He says in effect that this ideal content is still given by the thing through sensation, but given at first only as a suggestion, as an hypothesis, whose agreement with things must be found through "further observation of the senses." This is, of course, equivalent to saying that it is partly given and partly constructed; which, again, is saying that it is given, yet not given. It opens the old breach between sensation and the ideas, and all the old difficulties at once appear. Even if the sensations, given by the thing, can, in some way, call out or suggest a wrong connection of ideas, there is the further question of what accounts for the appearance of one connection of ideas rather than any other as a "trial predicate." The appeal to past experience does not help; for just *this* sensation and connection of ideas, *i. e.*, "gold-soluble-in-aqua-regia," has never occurred before. On the other hand, if such a connection really has been made hard and fast by habit, then again, whence the uncertainty and possibility of mistakes in the present case?

These difficulties suggest in passing that one source of the ambiguity in passive empiricism, whether of the sensational or rational type, is in making its analysis of experience from the standpoint of the past, or rather from the present looking toward the past; and toward the past regarded as consisting of a series of definite experiences, to terms of which the present can be reduced. Of course, any account of knowledge must appeal to the past; but if the point of view is taken in the present looking to the *future* as well as to the past, one forms quite a different conception of the past, of habit, and its connection with present demands.

These problems involved in Locke's conception of the formation of the hypothesis follow him, of course, in his account of verification. His first statement is that the connection of ideas, "gold-soluble-in-

aqua-regia," having been stimulated in some way by reality through sensation, is to be verified by "further observation of the senses." But if sensation begins by stimulating a doubtful connection of ideas, what guarantee is there that more sensation will not make matters worse? Why should it not simply give rise to ideas as doubtful as the first? Or, conversely, if the further sensations reveal reality, why should not the first do so? What is the difference between the sensations producing uncertainty and those resulting in verification?

Locke, of course, did not raise the question in this form. But he answers it by saying, in effect, that the difference between the sensations producing doubt and those bringing certainty is simply the difference between the incomplete and the complete, between the partial and the whole experience. The reality as it appears in the beginning of the experience is partial; hence the ideas stimulated by it are partial. In the further sensation more reality is given, and the ideas are reconstructed accordingly.

But now comes the question with which passive empiricism, sensational and rational, has so much difficulty; viz., the question of a standard for this completeness. If further sensation keeps on giving more reality and this stimulates further reconstruction of ideas, at what point is verification reached? Locke's feeling of these difficulties finds expression in his confession that this verification is valid only while the sensation lasts; and this, of course, is a confession of no verification at all.

Stating the case in logical terms, Locke here starts by supposing the problem of verification to be all on the side of the predicate. The subject is given in sensation; the problem is to find the predicate for it, just as in the first statement of the judgment the problem was to find the subject. And, as in the latter case Locke found that there was no meaning in or basis for the connection of ideas constituting the predicate apart from the missing subject, so here the subject has no content except through the predicate. Hence Locke is in the position of trying to find a predicate to agree with the subject, which latter cannot be known except through the former. In other words, the subject is just as much in doubt, just as much in need of "verification," as the predicate. Locke's expression of this is found in the fact that about half the time he states the difficulty as one of a want of unity in the ideal content itself, instead of a lack of its connection with things.

The simple ideas whereof our complex ideas of substance, are made up, are, for the most part, such as carry with them *in their own nature* no visible

necessary connection or inconsistency with any other simple ideas whose coexistence with them we would inform ourselves about.[1]

To be sure, this lack of unity in the ideal content is due to lack of agreement of the ideas with things. But even so, this implies that unity of the ideal content, if it could be reached, would mean that the subject had been defined, and that there was no basis for a unity in the ideas, *i. e.*, in the predicate, outside this definition of the subject. Hence Locke's two statements of verification: one, as consisting in an agreement of ideas with each other — that is, in the construction of a predicate; the other, as the agreement of ideas with things — the defining of a subject. He does not see that it is both. Hence he tries alternately to make it one or the other. The reason he cannot make it both is that, with both subject and predicate developing together and with reality lying beyond the act of judging, Locke again has no way of determining when this development has reached a nodal point; no way of deciding when, in a particular case, the judging process has done its work.

Locke's account closes, then, with the confession that verification appears either needless or impossible. The final appeal to probability, based on the Real Essence, Nature, or the Deity, does not, of course, give any help on the logical problem. This Locke recognizes by refusing to call these "judgments of probability" knowledge.[2] They are merely practical devices whose value is guaranteed by some external power. On the other hand, in admitting the practical value of these judgments, Locke is confessing that there must be a kind of connection between the judgment and reality which he has not yet discovered. But it is to Locke's credit that he refused to the last to call judgments in which he could not *discover* this connection "knowledge."

Hume, as well as Kant, saw that in this final appeal to probability Locke's account of the judgment had simply "come full circle." On the supposition that life has something to do with reality, this final paradox of the practical value of the invalid judgment calls for the original question. In terms of Locke's illustration, this question is, again: Just what is the basis of the practical value of the judgment, "gold is soluble in aqua regia"? Whence the "practical" confidence in it?

[1] Book IV, 3:9. Italics mine.

[2] In the *Essay* Locke reserves the term "judgment" entirely for these practical judgments as opposed to knowledge. "Thus the mind has two faculties conversant about truth and falsehood: knowledge whereby it *certainly* perceives . . . . the agreement or disagreement of any ideas, and judgment, which is the putting ideas together or separating them in the mind when their certain agreement or disagreement is not perceived but *presumed* to be so" (Book IV, 14:4).

Here we are often warned that we must carefully distinguish between the logical and the psychological problem. We are admonished that confidence and validity are two quite different matters; and that the error of Locke, Hume, and Mill is precisely in mistaking the psychological for the logical ground of probability. Habit, in the sense in which Hume uses it, *i. e.*, as a repetition of instances, is often accepted as a sufficient psychological account of belief and probability, but rejected as a logical ground. But, unless we are to have an impassable dualism between our universal and individual, the considerations which make Hume's account of habit and Mill's multiplication of instances unavailable for logical purposes ought to tell equally against them as adequate psychological explanations. And, conversely, an adequate psychological account of probability ought to give the logical grounds. It is really Hume's psychology as well as his logic of expectation which breaks down. Habit, in the sense of a mere repetition of a given connection, offers no more psychological than logical ground of probability. If there is doubt to start with, repetition can only continue the doubt. Any addition of certainty, as Hume confesses, is a mystery. In what follows, therefore, we shall not be concerned with discriminating the psychological and logical parts of the account.[1]

Beginning with the sensation side of the problem, we find that the psychologist points out, first, that absence of sensation in activity means that the activity is in the habit or relatively mechanical form. By this he means a system of co-ordinated activities in which the activity at any moment seems to be an adequate stimulus to further activity. In this negative statement of sensation is implied its positive significance. As its absence means continuity of stimulation, so its presence means an interruption of this continuity. Here at the very outset we come once more upon Locke's crucial problem — *the source of this interruption*. If it be regarded as coming from without, if sensation means some utterly foreign force breaking in upon this habit system, then there seems to be no escape from the web in which Locke is caught. Whatever further difficulties of detail there may be, it seems that we must conceive this interruption as an inevitable outcome of the habit activity itself. Habit must carry in itself the conditions of its own interruption. But this is equivalent to saying that activity cannot be completely stated in terms of habit as above defined. For, if the very operation of habit results in its own breakdown, there must be another

[1] The writer is aware that the reconstructive part of the discussion from this point on contains only an outline, and that very much scattered, of an account of the judgment, the filling in of which would call for a complete logic, and would take us a long way from Locke.

function in activity, namely, that of reorganization — "accommodation," to use Mr. Baldwin's term. And if sensation be regarded as marking the point of the breach and the beginning of this process of reconstruction, then habit cannot be taken as a "form," in the sense of a *kind*, of activity, in distinction from consciousness as another kind. Habit and consciousness must be taken together as the constituent poles of activity; the former as the conserving or materializing, the latter as the reorganizing function. As such, consciousness cannot interfere with mechanism. Nor, to dogmatize a little further, can habit be regarded as that out of which consciousness as a new kind of activity somehow springs. Thus, when sensation is said to mark the point of a breach in the continuity of a habit, *e. g.*, walking, this cannot mean that the habit is that out of which consciousness as a new kind of activity is evolved. For this very statement of sensation presupposes still other consciousness, *e. g.*, the desire for locomotion, with reference to which the habit can be defined. Apart from such reference, neither habit nor its interruption can have any meaning. Apart from such reference one activity is as continuous or as broken, as good or as bad, as another. But this desire in turn presupposes a breach in some habit, *e. g.*, the process of food assimilation. All of which is saying, once more, that habit *and* consciousness must be taken together from the beginning as the constituent functions of one organic activity.

Returning from these very general and rather dogmatic statements of the larger outlines of the problem to Locke's stock illustration, we find that the sensation, announcing the disappearance of the lump of gold in the liquid, marks a break in the chain of habitual visual, tactile-motor activities involved in manipulating gold in liquids. This breach may come at either the visual end of the co-ordination in terms of color, or at the tactile-motor end. But, however involuntary this interruption may be, it must come in terms of a *disturbance of the activities going on*. In this first "shock" of interruption we have the "this;" in logical terms, the subject. But the interruption is not a *mere* interruption; it is a breach in certain specific activities at a certain point. This precise point must be located and defined. Here is the function of the idea — of the predicate. It is to state "what" the "this" *is*. In terms of the illustration the idea locates and defines the shock as an interruption of those activities which mean, when ideated as they are now, "gold-insoluble in liquids." But the very fact that this old co-ordination is ideated as possibly broken, as negated, means that a new co-ordination is forming. Unless experience falls into absolute

chaos, one co-ordination cannot be negated except through another. Thus the very process of locating and defining the interruption announced through sensation involves the ideal construction of a new co-ordination — the new predicate "gold-soluble."

Here, in the very formation of the hypothesis, Locke's problem is to get such a connection between the sensation as stimulus and this new ideal construction as response, as will prevent the latter from being a mere repetition of the content given in the former, and yet have connection enough to warrant the acceptance of the latter as a trial construction. But to the end Locke has either too much connection or none at all. The predicate merely copies or represents the subject, or has some unknown and unknowable connection guaranteed by Nature or the Deity. But if this ideal construction be a reconstruction of the very habit activities whose interruption constitutes the sensation, it seems that we have some ground for a connection of the kind which Locke sought in vain. Here the predicate, the ideal construction, is not called upon to copy or even represent something given in sensation, because nothing is here given in sensation but the demand for re-coördination. The new ideal construction is trying to "agree with sensation," not in the sense of reproducing something *appearing* in it, but in the sense of responding to its demand for reorganization. Hence the ideas run no risk in advance of being false to the reality which appears in sensation, because the only reality appearing there is this demand for reorganization.

The connection between sensation and idea is, here, not one that has *to be made*. It exists in the very manner of their origin. They are born together out of a common matrix of activity, and with the common function of reconstructing this activity. In a certain sense, however, it may be said that the ideas do have "a reference to a reality beyond" themselves given in sensation, and, from one phase of the process, a reference that seems to mean almost a "copy." Thus the very first step in reconstruction is to locate the disturbance. This means a "reflection," in a sense a mirroring of the habitual activities involved. "In a sense," because, after all, these activities are not reflected merely in their *old* form. Thus the old co-ordination "gold-insoluble" is not only reflected; it is reflected as *broken*. This means that it is reflected as *material* to be reconstructed. This first reflection is then not an image of an already constructed reality at all. On the contrary, it is a reflection of the activities involved in the manipulation of gold in liquids for the purpose of locating and defining the *demand* for, and at the same time the *materials* for, reconstruction.

Before following this process of reconstruction further, it may be asked: If sensation and idea thus have their organic connection through their common matrix of habit and through their common function of reconstruction, what of the other side of Locke's difficulty? Where is there any place for doubt and effort? Why does not the ideal connection take place at once and unequivocally? Why should it present itself merely as an hypothesis? If the ideas are to do nothing but mirror or symbolize some content given in sensation, the question, as we have seen, has difficulty enough. There seems to be either no problem or one impossible of solution. But when the organic relation of sensation and idea to habit is seen, this uncertainty has a basis of explanation. In the account here given, sensation and idea are born in uncertainty, in the uncertainty involved in the breaking up of the habit side of the activity. Of course, this carrying over of uncertainty from the thought side into habit presupposes still other consciousness — some desire, some end behind — with reference to which the habit and its interruption, and hence this "objective" uncertainty itself, can be defined. And this is saying again that sensation and idea—consciousness—is as much the outcome of previous consciousness as of habit; which means again that both the habit and conscious phases develop together and each through the other. While habit must thus refer back to some conscious end for its determination, it is, however, out of its entanglement while in the service of this end that new sensation and ideas, new consciousness, issues.

Now, so long as the work of thought is conceived as that of merely *reporting* the habit activities involved in the interruption, which is virtually what Locke's conception amounts to, there is either no place for uncertainty or no place for anything else. But when it is seen to be also a *reconstruction* of this material, it is not difficult to think of uncertainty in the beginning of this process of reorganization as signifying that a new work has begun, whose value, just because it is a new construction, cannot be given in advance. Doubt, hesitation, means in short, that thought is a *work* to be done, not a mere *reflection* of work already done. It does reflect, and in a symbolic fashion too, the work of past constructions, but it does this in order to locate the materials for new construction, not to reflect an already constructed and unchangeable reality appearing in sensation.

Also is it here apparent that the uncertainty of this new construction is not due, as Locke thought, to its being ideal, as opposed to sensation as real. We have seen that sensation is as much in doubt as

the ideas; and that this must be so, since the latter arises with and constitutes the definition of the former. Nor is it because the construction is new that it is doubtful. The old construction "gold-insoluble" is equally in doubt. The doubt, indeed, can be defined as the tension between the old habit co-ordination expressed in "gold-insoluble" and the new expressed in "gold-soluble." The old is questioning whether the "this" is "gold" or "solution," as the new predicate alleges. The new points, in turn, to the inability of the old to interpret the "this." While the doubt expresses this opposition, it is also the demand for reconciliation, for continuity. It is the protest of the old against being displaced by outside material. The old insists that its successor must be its own offspring, not an alien. From the side of the new construction doubt means that it, too, is demanding just this connection. It is seeking to establish its filial relation with the old.

Now, it is this work of resolving this ideal tension, of changing this opposition into co-operation, that constitutes the verification stage of reconstruction. Here again is the basis of Locke's definition of the completed judgment as the agreement of ideas with each other, or as the attainment of a consistent complex idea. Locke saw that this tension must be resolved; that the thought-process must somehow reach a nodal point, if life is to go on. But with the unit ideas given, and being partial copies or symbols of reality, when once the opposition is admitted, he found no way of resolving it. Locke's verification meant establishing the claims of one of these ideal contents against, and to the exclusion of, the other; both at the same time professing to represent reality.

The only hope of resolving this tension would seem to be in some further reconstruction that should be different from either, and yet include both. And if this is to happen, and yet be true reality, it would seem also that the relation of ideas to reality must be other than that of a mere representation of the latter by the former. In the illustration, this interaction between the new and the old may begin in the form of an appeal of the former to the latter to vouch for its material, to identify the gold and the process of solution. But from Locke's standpoint this identification is impossible. The old content, in its present form, can merely contradict the new and not identify it. For the old knows no gold that is soluble, nor any process of solution including gold. Manifestly, if the new construction is to "find itself in the old," it can be only when the latter has changed its form. And

this is just what happens. The old co-ordination "gold-insoluble" at once begins to break up in order that the elements in it entering into the new may be found.

Here again appears the significance of Locke's appeal to "sensation" for verification when agreement of the ideas fails him. Just as sensation announcing the first breach in habit leads to this ideal tension between the old and the new, so now must this tension appeal back to sensation for dissolution. But the appeal is not, as Locke and Hume made it, to sensation as bringing in material from an outside source, nor to sensation as a repetition of the sensation with which the problem starts. This again, as Hume saw, can only continue, not resolve, the tension. This appeal of the ideas back to sensation means the sensation involved in the *further breaking up* of the old co-ordination, just as the sensation in the beginning marks such a breaking up. In logical terms, this means the reaction of the predicate, of the hypothesis, upon the subject. The lack of unity in the predicate demands further analysis in the subject. This means that ideation as the reconstructive function must have more material from the habit side.

At this point comes in the work of the laboratory—of what Locke calls "experimentation." However, Locke does not see, on the one hand, that experimentation really starts, indeed that the very essence of the experiment lies, in the first formation of the new ideal construction. Nor, on the other hand, does he see that experimentation is not a mere experimenting *upon* the hypothesis, but is the process of *completing the reconstruction* which begins in the formation of this hypothesis. To Locke experimentation is a matter of beating about in the hope of "finding" one or the other of these ideal contents "in things." For modern science, however, the laboratory with all its equipment is simply a huge machine for further breaking up the old habit co-ordinations in order to get further material for reconstruction. This means, of course, that analysis is anything but an affair of mere gazing and waiting. Thus, in our example, the tension between the old and the new is demanding that the old co-ordinations expressed in "gold" and "solubility" be broken up and searched for "elements" entering into the new. This means literally a reconstruction of the activities involved in the experiences of gold and solution. It means precisely that the connection between the color, malleability, solubility, etc., of gold which Locke thought must be given, must be constructed.

The lack of "necessary connection" which Locke laments, is thus a matter which primarily meets the physicist and the chemist rather than

the analyst of the human understanding. It meets the latter only because it has met the former. Lack of "necessary connection" means for the scientist that the analysis of this habit matrix has not gone far enough to show just what activities are entering into the reconstruction. Hence the latter remains "empirical." Thus again logical uncertainty goes back to practical uncertainty. Locke's lament of the theoretical uncertainty of his useful judgment really means that the practical problem is not yet solved.

Here appears, too, the significance of Locke's exception of ethical and mathematical judgments from the fate of the propositions concerning substances. The mathematical judgment is a statement of the limits of this breaking up of the habit material; that is, it states the limits of the process of getting the "elements" that enter as "units" into the new construction. But for Locke this material is given by the "thing" through sensation, while the method and limits of reconstruction are furnished "by the mind." The mathematical proposition is thus independent of the "thing." It has no external archetype to which it must conform. It is itself a reality, co-ordinate with the reality of the material. Locke, of course, never explains how these two realities, the one of the method, the other of the material, unite in one. It remained for Kant to raise the problem in this form. The reality of the ethical judgment is admitted by Locke on the same general ground as that of the mathematical; viz., that it has no archetype with which it professes to agree. But this absence of the archetype in the ethical judgment has a further significance. In the mathematical proposition this absence is due to the abstraction of the method of operation from the material. In the ethical it is due rather to their synthesis. That is, in the ethical proposition thought is taken as a concrete part of "the conduct of life." As such, it requires no archetype with which to agree. As merely intellectual, thought may need an archetype to which it can be true. But as an act, its sole "object" and criterion are found in this stream of conduct.

Coming back to the process of reconstruction, in speaking of the further breaking up of the old co-ordination in order to find the "elements" of the new, we must again keep in mind that these "elements" are not little ultimate, irreducible unit habits into which these co-ordinations can be resolved. This would carry us back into all Locke's difficulties. The whole of Locke's trouble with his simple ideas is that they are taken as ultimate units of habit entirely apart from any act, in which only such a unit can be defined. The result, as

we have seen, is that there is no standard for their simplicity. By "elements," then, must be meant the activities, visual, tactile-motor, etc., that issue out of this breaking up as the materials for the new construction, with the reference to which only are they elements.

Meanwhile it is not only the old co-ordination that is undergoing analysis. The resolution of the tension involves concessions on both sides. In the first stage of doubt, the old and the new are equally material for the further work of reconstruction. Hence we find the new construction changing from the vague, general form of "gold-soluble," with which the judgment starts, into the definite "gold-soluble-in-aqua-regia-under-certain-conditions-of-temperature,-atmospheric-pressure,-etc." At whatever point this process stops, the outcome is a construction different from either of the terms in opposition at the beginning, and yet one to which both have contributed material. "Gold-soluble-in-aqua-regia, etc." is neither "gold-soluble" nor "gold-insoluble," and yet both are included.

It has just been said, "at whatever point this process of reconstruction stops, etc." This brings us to the last, and perhaps the crucial, point of the problem. What determines the stopping-point of this process of interaction? When does the opposition pass into harmony, doubt into certainty? When is the reconstruction true? When is the judgment complete? These questions send us back to our starting-point. Let us recall that back of this process of interaction between the new and the old through sensation lies some need, some interest, involving the manipulation of gold and liquids, and employing the habit activities, whose entanglement calls for this act of reconstruction. In a very general way this indicates at once the answer to these questions. As the interruption of activity involved in the pursuit of this interest constitutes the *demand* for this reconstruction, so the ability to resume operations constitutes the criterion for its completion. Once more, the terms "interruption" and "resume" are not meant to imply that there has been any absolute stoppage on the side of either habit or thought. They mean only a change in the activity which both constitute. They mean that the co-ordinations at work in the service of a certain interest break up and must be reconstructed with reference to that interest. This involves, too, a reconstruction, an expansion and enriching, of this interest.

Here it may be said that the expression "ability to resume operations" begs the point, since included in this "ability" is a certain confidence in the validity of the work of thought in advance of the

practical test. If by this confidence be meant the conviction that thought, as thought, is making an actual contribution, is doing work, there need be no difficulty. But if it mean that thought *apart from the habit side* makes a reconstruction that is to be final, then, once more, whence any doubt and uncertainty? Why does not thought do its work at once and unequivocally, and have done with it? The fact that it does not suggests that the final reconstruction in which this confidence and certainty is felt is not the work of "mere thought" as opposed to habit. The materials for this reconstruction in its final form are already in action. As we have seen, they are found in the process of breaking up habits already *at work*. Hence the materials, thus taken in action, are tested in the very act of selecting them; or, rather, they are selected because they work. The confidence is not, then, in the work of "mere thought," but in the entire outcome which is the product of thought and habit. Indeed, the stage most nearly approximating "mere thought"—that of the first formation of the hypothesis—is one of doubt. It is not until this hypothesis has been further reconstructed through interaction with the habit matrix that the readiness, including the confidence, for action comes; but when this point is reached, *this* work of reconstruction is done. The judging process is verified in the fact that it has done what it set out to do, namely, reconstruct the interrupted activity.

Essentially the same objection may be put in another form. If the criterion of reconstruction is thus found in the response to the demands of a specific interest, one may ask how this provides for the element of universality in verification. How does it account for the sense of value of the present reconstruction for future experience? How does it meet Locke's problem of probability? Of course, we have been saying ever since Kant that the particular must carry the universal with it; that doubt of the value of the reconstruction for further experience—doubt of the universal—involves doubt of the reconstruction for present purposes—doubt of the particular. Now, so far as the time aspect is concerned, Kant pointed out that no situation, no interest, can be merely present. The present interest dips into the future as it does into the past. But while Kant laid bare this organic relation between the particular and the universal as a general fact, he had great difficulty in getting at the basis and method of it. *That* the one involves the other was always clear. *How* it does it was the problem. We cannot be content with saying that, taking reality as an organic unity, formally, the whole—the universal—must *some*how appear in the particular.

The problem is precisely how this takes place; and whether this "organic unity" can be conceived as an already completed system.

Here we must hark back once more to the central fact that this reconstruction made to meet present demands has no other material for its work than the very activities out of which the demand itself has arisen.[1] Sensation, with which this process begins, does not create or import any new material. It is simply the demand for and stimulus to the work of reconstruction. The fact that there is here no other material on which to work than just these visual, tactile-motor, etc., co-ordinations, constructed in the past, means that the form, the method, of experience is just this process of reconstructing the results of its own activity. As the present is a reconstruction of the past, so the future must be a reconstruction of the present. Every judgment thus appeals to the future as much as to the past. This does not mean that this reconstruction will continue to be used in just its present form as a hard and fast unit in future reconstructions. Indeed, as material for the future, it must mean just the opposite. It too will be broken up just as in this case the old co-ordination "gold-insoluble" has been. On the other hand, it does mean that there can be no future experience involving gold and liquids into which this co-ordination must not enter as *material.*

From this standpoint the universal in the particular means that there is no material for reconstruction but the results of preceding activity. The particular in the univeral means that this reconstruction is not being made merely for the sake of working up material at large, but that it is made to meet the demands of a specific situation and interest; and that in so doing it is at the same time creating material with which other situations are to be met. In this dynamic unity of development, the universal in the particular, in the sense of "the whole in the part," does not take on the paradoxical form that it assumes where reality is conceived as a completed system. It does not demand that we try to conceive quantitatively a completed whole in a coexisting part of it. It only means that what has been a reconstruction — a whole, a wholling of experience — is now entering as an element, a part, into a new reconstruction, a new whole; and that this latter must in turn become material. Here whole and part do not signify two distinct

[1] Having in mind the doctrine of apperception, some may regard this constant appeal to the results of previous activity as a case of what Mr. James calls "a painful elaboration of the obvious." But in apperception, as usually expounded, this past activity— the "apperceiving mass"—has nothing to do with sensation and the "raw material" of knowledge. The latter is still "given" from some other source, and the dualism between the material and the process of knowledge remains.

coexisting contents which yet must somehow be one. They mean different ways in which certain contents, *i. e.*, certain activities, operate. If a certain co-ordination between the eye and the hand is demanded, this co-ordination is projected as an ideal whole into which selections from other co-ordinations, themselves once such wholes, enter as parts.

This account of the universal in the particular is at the same time a statement of that ground of probability, of practical certainty, which Locke to the last sought in vain. Probability, the sense of security, stands again for just this fact, that experience is the process of reconstructing itself out of the results of its own work. There can be, therefore, no future experience into which the present reconstruction shall not enter. Hence there is just as much sense of continuity of the present with the future as with the past. But with the material for construction given from an external source, as it is for Locke, there is no ground for such a sense of continuity. From the other standpoint, however, the future is just as well guaranteed as the present and past. In the future lies the further development of the meaning and value of the present and past. In this sense the future is not only guaranteed by, but is the guarantee of, the present and past; that is, it guarantees the further development of their meaning. The value and meaning of the reconstruction made for present demands gets a further extension when it enters as material into further experience. We cannot, then, speak of the future as contingent, in contrast with the past and present as fixed and secure. In our illustration we have seen how the old construction "gold-insoluble" falls into doubt and finally disintegrates. In every new construction it is precisely the past that is broken up and rebuilt. Uncertainty of the future occurs then at the point where the work of reconstruction, meeting present demands, is *not complete; i. e.*, complete with reference to this demand. But this involves an equal uncertainty of the past and the present. Doubt, therefore, looks both ways, backward as well as forward.

But this uncertainty, which is a part of the process of reconstruction, is not an uncertainty concerning the possibility of knowledge, that is, concerning the possibility of reaching any reconstruction whatever. The latter, indeed, is wholly inconsistent with the former. It would mean a total paralysis, a cessation of the very activity in which the problem and the doubt arise. On the other hand, the "perfect certainty," the lack of which Locke mourns, would mean that the present reconstruction as material for the future must be used in its present form; that it must remain intact; and this would mean the

complete reduction of experience to terms of habit. Probability, then, means that, while the value of the present work as material for further experience is assured, it is assured only as *material.* Just what this value will be when it enters into this further experience cannot, of course, now be determined; else the future would be "present in the instant," and experience be reduced to a vast static system in which there is no place for doubt and struggle; in which development, growth, could have no meaning.

But, granting that the judgment in deriving its materials from the results of previous reconstructions and in constituting material for future experience thus gets a functional sort of universality, how, as a process of constantly breaking up and reconstructing content, can it be true to reality? Here we must again go back to Kant. The very question suggests that we are starting with a certain conception of reality with which our theory of knowledge must be brought into agreement. Kant saw that we must come at the matter from the other side —that we must arrive at our conception of reality from an analysis of the process of knowledge; that is, we must find out to what kind of reality it is possible for knowledge, from its very nature, to be true. From the account of the judgment above given, it seems difficult for thought to be true to reality, if the latter be conceived as an already constructed whole which thought is to reflect or even symbolize part at a time. For, apart from the difficulties in distinguishing truth and error until this whole is reached, we have found by direct analysis that the reflecting, symbolizing function involves at the same time the disintegration of the material reflected. Where in such a process is there any place for a completed system of reality? Nor does the combination of the conceptions of a progressive representation and some sort of pre-established harmony seem to help. For, if the harmony between our partial representation and the whole be really established, whence again doubt and error? Does a pre-established harmony imply also a pre-established discord? And, if so, what, again, is to distinguish them?

If, then, we are to look for reality in that to which thought from its very nature can be true, it would seem that we must find it precisely in the process of which thought is an organic constituent function —the concrete process of Experience itself; the process which is ever reconstructing itself out of the products of its own activity. Here reality is not something which thought must reflect or symbolize. It is that which the reflecting, symbolizing activity of thought helps to consti-

tute. Thought, as symbolic, is not symbolic *of* reality, but is the symbolizing function in reality. Thought is "true" to reality, therefore, when it meets the demand of the concrete situation in which it arises; when it brings about the reconstruction of the activity out of which and for whose reconstruction it is born.

Have we here, then, a clue to the solution, or dissolution rather, of the paradox of the useful falsity of knowledge with which we started? This paradox, we have seen, is the outcome of assigning to thought a double rôle. To be useful, thought must reconstruct activity to meet the concrete demands of life; to be "true," it must reflect a system of reality beyond. If there be difficulty in the latter, still must "the affairs of life" go on. They will not wait for the completion of the system of knowledge. Hence we must get on as best we can with our "partial," unverified, and therefore uncertain judgments. But if this "getting on" constitute the verification of the judgment, and if the value of the latter in "the conduct of life" constitute its truth and reality, does not the paradox disappear? But again, and finally, this must not be taken to imply that there is a primary activity called "life," out of which or in which is somehow generated or "evolved" another species of activity called "consciousness," and that the latter is therefore determined by and dependent upon this primary activity. Nor, on the other hand, is consciousness to be regarded as a metaphysical ultimate to terms of which "life" can be completely reduced. As here conceived, "Life"-Experience is the one inclusive activity of which Consciousness *and* Habit — the Psychical *and* the Physical — are, to the last analysis, constituent *functions*.